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COUNTYWIDE *Solid Waste* Management Plan

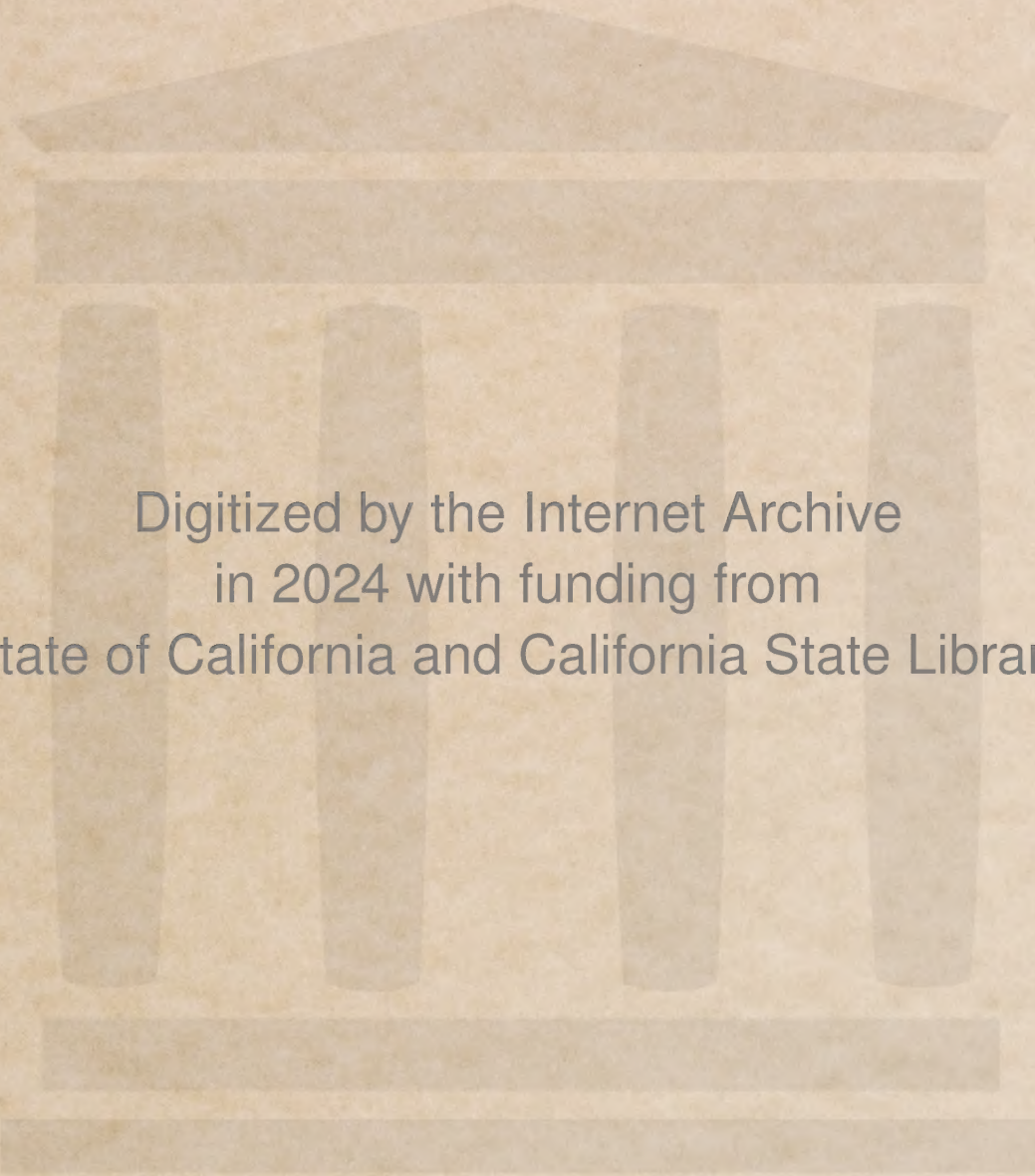
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VENTURA COUNTY

COUNTY SOLID WASTE MANAGEMENT PLAN
(CoSWMP)

APRIL 1985

TABLE OF CONTENTS

<u>CHAPTER AND SECTION</u>	<u>Page</u>
<u>PART A - GENERAL INFORMATION</u>	
<u>CHAPTER I - INTRODUCTION</u>	
1.1 GENERAL INFORMATION	16
1.2 OBJECTIVES.	16
1.3 COUNTY SOLID WASTE MANGEMENT PLAN (CoSWMP) DEVELOPMENT	17
1.4 REGULATIONS, REQUIREMENTS, AND PROCEDURES.	26
1.5 COSWMP CONTENTS AND ORGANIZATION.	29
<u>CHAPTER II - OVERVIEW OF EXISTING SOLID WASTE MANAGEMENT SYSTEMS</u>	
2.1 INTRODUCTION	31
2.2 TYPES OF SOLID WASTES	31
2.3 SOLID WASTE OPERATIONS	38
<u>CHAPTER III - PHYSICAL FEATURES</u>	
3.1 INTRODUCTION	46
3.2 PHYSIOGRAPHY	46
3.3 FLOOD PLAINS	49
3.4 SURFACE WATER	53
3.5 SOILS.	55
3.6 GEOLOGIC FEATURES	57
3.7 GROUND WATER RESOURCES	60
3.8 GEOHYDROLOGY	63
3.9 SEISMOLOGY AND LIQUEFACTION	65
3.10 FINDINGS	68
3.11 DEFINITIONS	69

PART B - NON-HAZARDOUS WASTE MANAGEMENT
CHAPTER IV - WASTE GENERATION: CURRENT AND PROJECTED

4.1 INTRODUCTION	71
4.2 MEASUREMENT OF QUANTITIES.	72
4.3 CURRENT WASTE LOADINGS AND ASSUMPTIONS, 1979-1982	77
4.4 PROJECTED WASTE LOADINGS AND ASSUMPTIONS, 1985-2005	82
4.5 CUMULATIVE WASTE LOADINGS AND REMAINING LANDFILL CAPACITIES	97
4.6 CoSWMP PROPOSED PROJECTS AFFECTING LANDFILL CAPACITIES	105
4.7 PRIVATE SECTOR PROPOSED PROJECT AFFECTING LANDFILL CAPACITIES	105
4.8 FINDINGS	105
4.9 RECOMMENDATIONS.	107

CHAPTER V - RESOURCE RECOVERY

5.1 INTRODUCTION	108
5.2 THE EXISTING RESOURCE RECOVERY SYSTEM	110
5.3 EVALUATION OF CURRENT RESOURCE RECOVERY TECHNOLOGY.	125
5.4 EVALUATION OF POTENTIAL FOR EXPANDED RESOURCE RECOVERY.	140
5.5 RECOMMENDATIONS.	145

CHAPTER VI - LITTER MANAGEMENT

6.1 INTRODUCTION	149
6.2 LITTER COMPOSITION	149
6.3 RESPONSIBILITIES AND COORDINATION	152
6.4 REGULATIONS AND ORDINANCES	153
6.5 LITTER MANAGEMENT OPERATIONS	156
6.6 CURRENT PROGRAMS	170
6.7 FINDINGS.	172
6.8 RECOMMENDATIONS	172

CHAPTER VII - AGRICULTURAL WASTE MANAGEMENT

7.1 INTRODUCTION	174
7.2 REGULATIONS	174
7.3 DESCRIPTION OF THE EXISTING AGRICULTURAL RESIDUE AND WASTE MANAGEMENT SYSTEM	174
7.4 EVALUATION OF THE EXISTING AGRICULTURAL RESIDUE AND WASTE MANAGEMENT SYSTEM	176
7.5 ALTERNATIVE AGRICULTURAL WASTE MANAGEMENT METHODS	181
7.6 FINDINGS	182
7.7 RECOMMENDATIONS	184
7.8 DEFINITIONS	185

PART C - HAZARDOUS WASTE MANAGEMENT
CHAPTER VIII - HAZARDOUS WASTE MANAGEMENT

8.1 INTRODUCTION.	186
8.2 CALIFORNIA'S HAZARDOUS WASTE CONTROL PROGRAM	186
8.3 VENTURA COUNTY'S HAZARDOUS WASTE MANAGEMENT PROGRAM GOAL AND OBJECTIVES	187
8.4 DESCRIPTION OF EXISTING HAZARDOUS WASTE SYSTEM.	188
8.5 EVALUATION OF THE EXISTING HAZARDOUS WASTE MANAGEMENT SYSTEM	192
8.6 ALTERNATIVE HAZARDOUS WASTE TECHNOLOGIES FOR VENTURA COUNTY	200
8.7 FINDINGS.	204
8.8 RECOMMENDATIONS.	205

CHAPTER IX - PESTICIDE WASTE MANAGEMENT

9.1 INTRODUCTION	207
9.2 REGULATIONS	207
9.3 DESCRIPTION OF THE EXISTING PESTICIDE MANAGEMENT SYSTEM IN VENTURA COUNTY	207
9.4 EVALUATION OF THE EXISTING PESTICIDE WASTE MANAGEMENT SYSTEM	210
9.5 PESTICIDE WASTE MANAGEMENT ALTERNATIVES	221

<u>CHAPTER AND SECTION</u>	<u>Page</u>
9.6 SPILL CLEAN UP AND EMERGENCY RESPONSE	222
9.7 FINDINGS	223
9.8 RECOMMENDATIONS	223

PART D - SPECIAL WASTE MANAGEMENT
CHAPTER X - INFECTIOUS WASTE

10.1 INTRODUCTION	224
10.2 PROPOSED NEW REGULATIONS	224
10.3 DESCRIPTION OF THE EXISTING INFECTIOUS WASTE MANAGEMENT SYSTEM IN VENTURA COUNTY	226
10.4 ASSESSMENT OF THE EXISTING INFECTIOUS WASTE MANAGEMENT SYSTEM . .	230
10.5 ALTERNATIVES TO THE EXISTING SYSTEM	243
10.6 FINDINGS	245
10.7 RECOMMENDATIONS	245
10.8 DEFINITIONS	248

CHAPTER XI - SLUDGE

11.1 INTRODUCTION	249
11.2 SLUDGE REGULATIONS	253
11.3 CURRENT SLUDGE MANAGEMENT PRACTICES.	256
11.4 EVALUATION OF SLUDGE DISPOSAL ALTERNATIVES	262
11.5 CURRENT PROBLEMS AND FUTURE NEEDS	266
11.6 FINDINGS	267
11.7 RECOMMENDATIONS.	267

CHAPTER XII - OIL FIELD WASTE MANAGEMENT

12.1 INTRODUCTION	269
12.2 THE EXISTING OIL FIELD WASTE MANAGEMENT SYSTEM	272
12.3 EVALUATION OF THE EXISTING OIL FIELD WASTE MANAGEMENT SYSTEM. . .	282
12.4 FINDINGS	291
12.5 RECOMMENDATIONS.	292

PART E - WASTE MANAGEMENT FACILITIES, PROJECTS AND PROCEDURES
CHAPTER XIII - SOLID WASTE FACILITY DESCRIPTIONS

13.1 INTRODUCTION	296
13.2 CURRENTLY OPERATING FACILITIES	297
13.3 FACILITY CLOSURES	301
13.4 EXPANSION OF EXISTING FACILITIES	305
13.5 PROPOSED NEW FACILITIES	305
13.6 FINDING AND RECOMMENDATION.	307

CHAPTER XIV - DISPOSAL SITE EVALUATION PROCESS

14.1 INTRODUCTION	309
14.2 SUMMARY OF SITE SECTION PROGRESS.	315
14.3 DETAILED DESCRIPTION OF DISPOSAL SITE EVALUATION PROCESS.	317
14.4 REVIEW OF DRAFT PLAN.	351
14.5 DESCRIPTION OF CANDIDATE DISPOSAL SITES.	355
14.6 FINDINGS	378
14.7 RECOMMENDATIONS	378
14.8 DEFINITIONS.	378

CHAPTER XV - PERMIT PROCESSING PROCEDURES

15.1 INTRODUCTION	380
15.2 PERMITS	380
15.3 ENVIRONMENTAL ASSESSMENT	392
15.4 PERMIT PROCESS TIMING	392
15.5 CONCURRENT VERSUS SEQUENTIAL PROCESSING	395

<u>CHAPTER AND SECTION</u>	<u>Page</u>
15.6 PERMIT PROCESSING STEPS	393
15.7 PERMIT APPLICAITON AND SUPPORTING DATA REQUIREMENTS	393
15.8 MINIMUM DEVELOPMENT STANDARDS	393
15.9 FINDINGS	403
15.10 RECOMMENDATIONS	403

PART F - PLAN OF ACTION

CHAPTER XVI - ADMINISTRATION, IMPLEMENTATION AND ECONOMIC FEASIBILITY

16.1 INTRODUCTION	404
16.2 COORDINATION	404
16.3 ADMINISTRATION	405
16.4 IMPLEMENTATION	406
16.5 ECONOMIC FEASIBILITY	
<u>REFERENCES</u>	446

VOLUME II APPENDICES (BOUND SEPARATELY)

A VENTURA COUNTY SOLID WASTE ENFORCEMENT PROGRAM	A-1
B VENTURA COUNTY HAZARDOUS MATERIALS RESPONSE PLAN	B-1
C STANDARD INDUSTRIAL CLASSIFICATION (SIC) NUMBERS AND CHARACTERISTICS OF WASTES PRODUCED BY INDUSTRY	C-1
D CANDIDATE SITES REPORT	D-1
E SOLID WASTE TASK FORCE ISSUE PAPERS AND RECOMMENDATIONS.	E-1

LIST OF TABLES AND FIGURES

<u>CHAPTER AND TITLE</u>	<u>Page</u>
<u>CHAPTER I - INTRODUCTION</u>	
Table I-1 CoSWMP Development Summary	18
Table I-2 Solid Waste Coordinating Committee.	21
Table I-3 CPP - Solid Waste Management Subcommittee	23
Table I-4 Task Force.	24
<u>CHAPTER II - OVERVIEW OF EXISTING SOLID WASTE MANAGEMENT SYSTEMS</u>	
Table II-1 Solid Waste Types and Sources	32
Table II-2 Estimate of Waste Composition of Ventura County Landfills, 1980-2005.	33
Table II-3 Hazardous Waste Haulers In Ventura County	35
Table II-4 Refuse Companies Serving Ventura County	40
Table II-5 Solid Waste Ordinance Requirements	41
Table II-6 Description of Collection Services by Community	42
<u>CHAPTER III - PHYSICAL FEATURES</u>	
Figure III-1 Physiography	47
Figure III-2 Mean Precipitation	50
Figure III-3 Seasonal Precipitation	51
Figure III-4 Mean Annual Evaporation	52
Figure III-5 Flood Plains	54
Figure III-6 General Soil Map	56
Figure III-7 Stratigraphic Columns	58
Figure III-8 Generalized Geographic Groups	59
Figure III-9 Major Groundwater Basins	61
Table III-1 Groundwater Basins in the South Half of Ventura County	62

<u>CHAPTER AND TITLE</u>	<u>Page</u>
Figure III-10 Liquifaction Potential, High Groundwater Tables	66
Figure III-11 Geologic Structures	67
<u>CHAPTER IV - WASTE GENERATION: CURRENT AND PROJECTED</u>	
Figure IV-1 Wasteshed Area Map	73
Table IV-1 Population by Wasteshed, 1979-1982	75
Figure IV-2 Calculations.	76
Figure IV-3 Landfill Wasteshed Areas	77
Table IV-2 Population Forecasts by Wasteshed, 1985-2005	78
Table IV-3 Current Western Wasteshed Area (Santa Clara Landfill) Waste Loadings (Tons) 1979-1982	79
Table IV-4 Current Eastern Wasteshed Area (Simi Valley Landfill) Waste Loadings (Tons) 1979-1982	80
Table IV-5 Current Central Wasteshed Area (Toland Road Landfill) Waste Loadings (Tons) 1979-1982	81
Table IV-6 Basic Assumptions for Projections.	82
Table IV-7 Projected Western Wasteshed Area Waste Loadings (Tons) 1985-2005.	84
Table IV-8 Projected Eastern Wasteshed Area Waste Loadings (Tons) 1985-2005.	90
Table IV-9 Projected Central Wasteshed Area Waste Loadings (Tons) 1985-2005.	95
Table IV-10 Western Wasteshed Area Cumulative Waste Loadings	99
Table IV-11 Eastern Wasteshed Area Cumulative Waste Loadings	100
Table IV-12 Central Wasteshed Area Cumulative Waste Loadings	101
Table IV-13 Remaining Capacity at Coastal/Bailard Landfill and Western Wasteshed Area Projections	102
Table IV-14 Remaining Capacity at Simi Valley Landfill and Eastern Wasteshed Area Projections	103
Table IV-15 Remaining Capacity at Toland Road Landfill and Central Wasteshed Area Projections	104

CHAPTER V - RESOURCE RECOVERY

Figure V-1	1982 Survey Estimate of Materials Recycled (Percent by Weight) Compared to Total Quantity of Waste Disposal . . .	111
Table V-1	1982 Survey Estimate of Materials Recycled in Ventura County	112
Table V-2	Results of Ventura County Resource Recovery Survey Conducted in 1982	113
Figure V-2	1982 Estimate of Materials Recycled (Percent by Weight) by Type of Organization	116
Table V-3	Automobile Salvage Yards	118
Figure V-3	1982 Survey Estimate of Percent of Materials Recycled in Ventura County (Percent by Weight)	121
Figure V-4	Recycling and Recovery Options - Compared to Waste Disposal	126
Table V-4	Survey of Curbside Recycling Programs	128
Table V-5	Selected Survey of Waste to Energy Proposals in California	138

CHAPTER VI - LITTER MANAGEMENT

Table VI-1	Nationwide Litter Composition Estimate.	151
Table VI-2	Estimate of Ventura Beach Promenade Litter Composition. . .	151
Table VI-3	Roadside Litter Composition Standard	152
Figure VI-1	Litter Management Coordination Within Ventura County . . .	153
Table VI-4	Summary of Litter Regulations	154
Table VI-5	Litter Cleanup Accomplishments, 1979-80	159
Table VI-6	Litter Management Summary, City of Camarillo	161
Table VI-7	Litter Management Summary, City of Fillmore	162
Table VI-8	Litter Management Summary, City of Ojai	163
Table VI-9	Litter Management Summary, City of Oxnard	164
Table VI-10	Litter Management Summary, City of Port Hueneme	165
Table VI-11	Litter Management Summary, City of San Buenaventura . . .	166

<u>CHAPTER AND TITLE</u>	<u>Page</u>
Table VI-12 Litter Management Summary, City of Santa Paula	167
Table VI-13 Litter Management Summary, City of Simi Valley	168
Table VI-14 Litter Management Summary, City of Thousand Oaks	169
Table VI-15 Anti-Litter Station Operations, FY 1981-82	170
Table VI-16 Operational Information for County Anti-Litter Stations. .	171

CHAPTER VII - AGRICULTURAL WASTE MANAGEMENT

Table VII-1 Estimated Livestock Manure Generated in 1982	177
Table VII-2 Estimated Residues Generated from Major Vegetable Crops Produced in Ventura County	178A
Table VII-3 Estimated Residues Generated from Fruit and Nut Crops produced in Ventura County for 1982	180
Table VII-4 Monthly Total of Agricultural Waste Disposed in District Landfills	183

CHAPTER VIII - HAZARDOUS WASTE MANAGEMENT

Figure VIII-1 Response Initiation Process	191
Table VIII-1 Industries Surveyed	194
Table VIII-2 1982 Estimate of Hazardous Waste Generation in Ventura County (Legal Disposal Off Site)	195
Figure VIII-2 Percentage of Hazardous Waste Generated in Ventura County by Industrial Classification	196
Figure VIII-3 Number of Violations by Type of Violation	198
Table VIII-3 Disposal Sites Used	199

CHAPTER IX - PESTICIDE WASTE MANAGEMENT

Figure IX-1 Percent of Pesticides Used to Total Amounts of Active Ingredients for the Ten Most Frequently Applied Pesticides Reported in 1982	212
Table IX-1 Ten Most Used Pesticides in Ventura County, 1982	213

<u>CHAPTER AND TITLE</u>	<u>Page</u>
Table IX-2 Pesticide Containers Disposed of at Simi Valley Landfill in Ventura County by VRSD During 1982	216A
Table IX-3 Pesticide Containers Disposed of at the Toland Landfill in Ventura County by VRSD During 1983	217
Figure IX-2 VRSD Application for Disposal of Empty Containers	218
Figure IX-3 Hauler and Generator Procedures for Disposing of Empty Pesticide and Herbicide Containers at VRSD Toland Road Sanitary Landfill	220

CHAPTER X - INFECTIOUS WASTE

Table X-I Health Care Facilities Inspection Summary	231
Figure X-1 Biohazard Symbol	234
Figure X-2 Percent Infectious Waste Generated by Facility Classification	235
Table X-2 Summary of Infectious Waste Generated by Facility Classification	236
Table X-3 Infectious Waste Management Data for Ventura County Medical Facilities	238

CHAPTER XI - SLUDGE

Figure XI-1 Typical Process Flow Diagram	250
Table XI-1 Guidelines for Sludge Analysis Parameters and Frequency .	255
Figure XI-2 Locations of Wastewater Treatment Plants and Sludge Disposal Facilities in Ventura County	257
Table XI-2 Summary of Sludge Management in Ventura County	258
Figure XI-3 Sludge Disposal Alternatives for Ventura County	264

CHAPTER XII - OIL FIELD WASTE MANAGEMENT

Table XII-1 California Department of Health Services Drilling Mud Additives Used in Non-Hazardous Drilling Muds and Fluids, May, 1982.	271
Figure XII-1 California Department of Health Services Letter, May 1982.	272
Figure XII-2 Oil Field Waste Composition	275

<u>CHAPTER AND TITLE</u>	<u>Page</u>
Table XII-2 Oil Field Wastes Summarized.	280
Table XII-3 Oil Field Waste Haulers Servicing Ventura County	281
Table XII-4 Oil Field Waste Generated Within Ventura County Requiring Disposal Offsite, 1981	283
Table XII-5 Oil Sumps in Ventura County.	286

CHAPTER XIII - SOLID WASTE FACILITY DESCRIPTIONS

Table XIII-1 Summary of Disposal Facilities	297
Table XIII-2 Summary of Closed Disposal sites	302
Figure XIII-1 Closed Refuse Disposal Sites	303
Figure XIII-2 Existing and Proposed Solid Waste Facilities	306

CHAPTER XIV - DISPOSAL SITE EVALUATION PROCESS

Table XIV-1 Summary of CoSWMP Site Evaluation Process	311
Table XIV-2 Sources of Information	313
Figure XIV-1A Critical Factors Analysis Guide	316
Figure XIV-1B Disposal Sites Evaluated	319
Table XIV-3 Critical Factors Analysis Summary	321
Table XIV-4 Primary Site Rating Criteria	325
Table XIV-5 Primary Disposal Site Rating Scores	333
Table XIV-6 Secondary Disposal Site Rating Criteria	335
Table XIV-7 Secondary Disposal Site Rating Scores	339
Figure XIV-2 General Locations of the Six Candidate Sites Evaluated .	344
Table XIV-8 Composite Disposal Site Ratings	345
Table XIV-9 Locational Characteristics for the Six Candidate Disposal Sites Evaluated	346
Table XIV-10 Disposal Site Evaluation Summary	348
Table XIV-11 Consultants Comparison of Three Candidate Sites	352

<u>CHAPTER AND TITLE</u>	<u>Page</u>
Figure XIV-3 Weldon Canyon (Site #1)	357
Figure XIV-4 Aliso Canyon-Willoughby Road (Site #2)	362
Figure XIV-5 School Canyon (Site #3)	366
Figure XIV-6 Manuel Canyon (Site #4)	369A
Figure XIV-7 Hall Canyon (Site #5)	372A
Figure XIV-8 Hammond Canyon (Site #6)	375A

CHAPTER XV - PERMIT PROCESSING PROCEDURES

Table XV-1 Required Permits and Prerequisite Information	381
Table XV-2 Required City Permits and Prerequisite Information	386
Table XV-3 Process Step Chart	394
Figure XV-1 Sequential Processing Scenario	399
Figure XV-2 Concurrent Permit Processing Scenario	400
Table XV-4 Application Data Requirements	401
Table XV-5 Minimum Development Standards	402

CHAPTER XVI - ADMINISTRATION, IMPLEMENTATION AND ECONOMIC FEASIBILITY

Table XVI-1 Organizations Performing Existing Solid Waste Management and Administration Functions within Ventura County	407
Table XVI-2 CoSWMP Implementation Schedule	409
Table XVI-3 Summary of Projected Expenses and Potential Revenue, 1983-1986 (Short Term)	432
Table XVI-4 Summary of Projected Expenses and Potential Revenues, 1990-2005 (Mid to Long Term)	436
Table XVI-5 1984-85 Proposed Solid Waste Operations by Functional Area.	440
Table XVI-6 Proposed User Fee Schedule Landfills and Transfer Stations	441
Table XVI-7 Five-Year Capital Improvement Budget - Heavy Equipment Replacement	442

<u>CHAPTER AND TITLE</u>	<u>Page</u>
Table XVI-8 Five-Year Capital Improvement Budget - Bailard Landfill Start-up	443
Table XVI-9 Five-Year Capital Improvement Budget - Landfill Closure .	444
Table XVI-10 Five-Year Capital Improvement Budget - Replacement Landfill	445

CHAPTER I - INTRODUCTION

1.1 GENERAL INFORMATION

The Ventura County Solid Waste Management Plan (CoSWMP) was prepared in accordance with all procedures and guidelines established by the California Waste Management Board (CWMB). This includes Title 14 of the California Administrative Code, and the California Solid Waste Management and Resource Recovery Act of 1972. When the State mandated comprehensive planning for solid waste in 1976, this was a fairly new approach to solid waste management. Basically, State regulations require all counties to develop comprehensive solid waste management plans. These plans are to be reviewed and approved by the majority of the cities with the majority of the incorporated population within the County, and the Board of Supervisors. Final review and approval rests with the California Waste Management Board (CWMB) in Sacramento. The CWMB is responsible for insuring that all plans comply with established State policies and requirements.

This chapter of the County Solid Waste Management Plan (CoSWMP) describes State regulations, requirements and procedures relative to both CoSWMP updates and amendments. In addition, this chapter provides specific information concerning the objectives and development of Ventura County's Solid Waste Management Plan including the purpose of the Plan update, and the composition of the advisory committees established to participate in the update process. This chapter also provides information concerning public participation, plan contents and organization, and management of solid waste, non-hazardous waste, and special waste. Since radioactive wastes are not covered under current Solid Waste Management Regulations, they are not addressed within this CoSWMP update. Radioactive wastes are covered under California Radiation Control Regulations specified in California Administrative Code Title 17. The CoSWMP process provides a mechanism for adequately exploring and identifying solid waste disposal alternatives. Therefore, this CoSWMP update emphasizes alternatives to conventional disposal which are addressed within each chapter.

1.2 OBJECTIVES

Proper management of solid waste is mandated by a series of Federal and State Regulations, and County ordinances. They provide safeguards for protecting the health of citizens, and assist in conserving our natural resources. Major objectives in updating Ventura County's Solid Waste Management Plan are to:

- o Identify tentative municipal waste landfill sites in the western watershed of the County.
- o Provide adequate safeguards for protecting public health and natural resources.
- o Provide a means for coordinating solid waste management planning with governmental agencies, private industry and citizen groups.
- o Develop a viable, implementable and cost effective system for managing solid and hazardous wastes.

- o Assess the need for and adequately explore and identify alternatives to landfill disposal.
- o Develop environmentally sound criteria for evaluating potential disposal site locations.
- o Develop a Solid Waste Management Plan which is in compliance with all applicable regulations and guidelines.

1.3 COUNTY SOLID WASTE MANAGEMENT PLAN (CoSWMP) DEVELOPMENT

A. Background

A Summary of the development of the County Solid Waste Management Plan is provided in Table I-1. In Ventura County the responsibility for administering and implementing the CoSWMP ultimately rests with the Board of Supervisors. In 1972, the Board delegated this authority to the Ventura Regional Sanitation District (VRSD). The VRSD, in October, 1975, prepared the first draft of the County Solid Waste Management Plan (CoSWMP), which was subsequently approved in 1976. The CoSWMP was revised by the VRSD and released in 1981. After reviewing the 1981 Draft update, the Board of Supervisors delegated the responsibility for developing the County Solid Waste Management Plan to the County's Resource Management Agency (RMA) Planning Division. At that time the Board directed the Planning Division to:

- o Establish a process for reviewing overall development of the Plan.
- o Address oil field waste disposal and hazardous waste.
- o Provide procedures for evaluating and selecting potential disposal site locations within the County.

The Planning Division prepared a comprehensive work plan in December of 1981, which was designed to accomplish the tasks mandated by the Board of Supervisors. Those tasks were:

- o Describe and evaluate the existing disposal system.
- o Forecast future waste quantities and projected waste loadings.
- o Evaluate potential alternatives to landfilling.
- o Assess the need for additional landfill sites.
- o Identify future landfill sites.
- o Develop an implementation plan.
- o Prepare an Environmental Impact Report.
- o Provide a process for review of the draft and final plan.
- o Develop and support a program for informing public agencies, private organizations and individual citizens of County Solid Waste Management Plan progress.

TABLE I-1

CoSWMP DEVELOPMENT SUMMARY

- 1970 - Ventura Regional Sanitation District (VRSD) was formed.
- 1971 - State Solid Waste Management and Resource Recovery Act passed. VRSD was given responsibility for solid waste management including the CoSWMP.
- 1975 - Resource Conservation Recovery Act passed at Federal level based on California laws. First draft CoSWMP developed by VRSD on contract.
- 1976 - First CoSWMP approved by the Board of Supervisors.
- 1981 - February - VRSD initiated update of previously released 1976 CoSWMP.
- 1981 - September - Board of Supervisors transferred responsibility for CoSWMP to the County's RMA/Planning Division.
- 1981 - December - Board of Supervisors approved CoSWMP work plan.
- 1982 - May - County Solid Waste program manager selected.
- 1982 - December - County Solid Waste Management Plan update extension approved by the Board of Supervisors.
- 1983 - July - Draft County Solid Waste Management Plan update released by the Board of Supervisors for review.
- 1983 - November - The Board of Supervisors requests additional information including the preparation of an economic feasibility study and the formation of a task force to review the study and alleviate other issues and concerns.
- 1984 - July - Solid Waste Task Force holds final meeting.
- 1984 - September - Board of Supervisors receives Solid Waste Task Force recommendations and provides direction to staff.
- 1984 - November - Final Draft County Solid Waste Management Plan is released by the Board of Supervisors for approval by the ten cities of Ventura County.
- 1985 - April 15, 1985 - Deadline for city action. Six cities (Camarillo, Fillmore, Moorpark, Simi Valley, Thousand Oaks, and Ventura), representing 65.9% of the incorporated population, approved the Plan.
- 1985 - April 23, 1985 - Board of Supervisors unanimously adopts 1985 Ventura County Solid Waste Management Plan.

Source: Ventura County Planning Division 1983 (Revised 1984 and 1985).

According to the initial work program approved by the Board of Supervisors, the CoSWMP was to be developed by January, 1983. However, new legislation (AB 3302 and 3334), which became effective in January 1983, impacted on the CoSWMP development time frame. Therefore, the RMA Planning Division revised the CoSWMP Work Program and requested that the Board of Supervisors extend the completion date to July, 1983. The Board of Supervisors approved the extension in December 1982. Approval for the extension was also provided by the California Waste Management Board.

After release of the Draft CoSWMP in July of 1983, the Board of Supervisors on November 1, 1983, requested additional information be assembled for review by a special task force. The Solid Waste Task Force, comprised of two members of the Board of Supervisors and six council members representing the Cities of Oxnard, Ojai, Simi Valley, Moorpark, and Santa Paula was created.

Seven issues were evaluated, including: 1) Desirability of replacing a site specific CoSWMP plan with a Policy Plan; 2) Inclusion of additional tentative landfill sites for the western watershed; 3) Economics of transfer vs. direct haul; 4) Impacts of using existing landfills instead of developing a new western watershed landfill; 5) Merits of requiring a combination landfill/oil field waste vs. allowing separate sites for each waste type; 6) establishing a new oil field site vs. utilizing the Simi Valley site; 7) Conventional land disposal of oil field waste vs. development of alternative treatment technologies. An economic comparison of river landfill sites vs. canyon landfill sites was also prepared as part of the evaluation of including additional landfill sites in the Plan.

An Issue Paper was prepared for each issue. These, along with the recommendations of the Task Force, are contained in Appendix E. The Board of Supervisors reviewed Task Force recommendations on September 4, 1984 and provided direction to staff. This Final Draft Plan reflected these recommended changes.

Following a 30 day postponement, to allow for further discussion of issues with the cities of Oxnard and Ventura, and the Ventura Regional Sanitation District, the Board of Supervisors received the Final Draft Plan at an October 30, 1984 public hearing. Following public testimony, the Board made final changes in the Plan and released it for city action.

State law requires a County Solid Waste Management Plan be approved by the majority of the cities in the County, representing the majority of the incorporated population before a Board of Supervisors can act on adoption.

Following several extensions, the deadline for city action was set for April 15, 1985. Six cities, representing 65.9% of the incorporated population, approved the Plan; four cities, representing 34.1% of the incorporated population, rejected the Plan (see Table I-1A). The Ventura County Board of Supervisors unanimously adopted the Plan on April 23, 1985 and authorized its transmittal to the California Waste Management Board for its action or approval.

B. Advisory Committees

The following advisory committees and actions were established to review the plan and monitor its progress:

1. Solid Waste Coordinating Committee (SWCC)

This Committee was established to monitor and review CoSWMP progress and operate as a technical advisory committee. This Committee advised staff on all issues relating to plan development including resource recovery potential, landfill siting, disposal site operating procedures, recycling options, and treatment process feasibility. The Solid Waste Coordinating Committee (SWCC) is comprised of 11 members and five alternates from industry, government, and local citizen groups. In addition to the appointed members, there were ten interested parties who attended meetings as specific topics of interest were presented. This committee convened on the first Wednesday of every month in the County Government Center Administration Building. Committee members provided input concerning findings and recommendations for future actions. Table I-2 provides a list of the committee members, alternates, interested parties and the groups they represented. In addition, staff contacts are also included.

2. Countywide Planning Program (CPP) Solid Waste Management Subcommittee

The Solid Waste Management Subcommittee is a subcommittee of the full Countywide Planning Program (CPP) which provides review of countywide issues and obtains participation from citizen and special interest groups, industry, and governmental agency representatives. This subcommittee is comprised of 12 members, three interested parties and three staff contacts. The listing of committee members, interested parties and staff contacts are provided in Table I-3. This subcommittee met in the County Government Center Administration Building on the 4th Wednesday of each month. Once a month, the subcommittee chairperson reported all subcommittee findings and recommendations to the full Countywide Planning Program Advisory Committee for action.

3. Task Force

A task force was established, as directed by the Board of Supervisors, to address issues and alleviate concerns relative to the solid waste management plan. This task force ensured a continual flow of information between County staff responsible for developing the plan, and the cities and Board of Supervisors' representatives responsible for making recommendations concerning this planning effort. This task force was comprised of eight members, two representing the County and six members those cities which are most directly affected by the plan recommendations. The city members represent: San Buenaventura, Oxnard, Santa Paula, Ojai, Moorpark, Simi Valley, and Ventura County. A list of task force members is provided in Table I-4.

The Task Force met a total of four times (February 9, June 27, July 18, and July 25, 1984). The issue papers they reviewed and their recommendations appear in Appendix E.

TABLE I-2

SOLID WASTE COORDINATING COMMITTEE

MEMBERS

	<u>NAME</u>	<u>REPRESENTING</u>
1.	Ralph Harrison (Chairperson) Ron Warne (Alternate)	Ventura County Waste Haulers Assoc. Ventura County Waste Haulers Assoc.
2.	Pat Essick (Vice-Chairman)	Resource Environmental Action Group (REAP)
3.	Joseph Farrar	American Waste Recovery System
4.	Ed Webster Jane Grogan (Alternate)	Getty Oil Co. Getty Oil Co.
5.	Arthur E. Goulet	Ventura County Public Works Director
6.	Steve Thurston	Advisory Policy Planning Committee
7.	Frances Rugen Cynthia Leake (Alternate)	American Association of University Women Sierra Club
8.	Victor R. Husbands	Ventura County RMA, Director
9.	Lin Koester Stephen Cooke (Alternate)	City of Simi City of Oxnard
10.	Earl McPhail	County Agricultural Commissioner
11.	Wayne Bruce David Long (Alternate)	Ventura Regional County Sanitation District (VRSD) Ventura Regional County Sanitation District (VRSD)

INTERESTED PARTIES

1.	Janet Beymer	Environmental Coalition
2.	Pearl Bice	Citizen
3.	Norm Blacher	Ventura County Association of Governments, Director (VCAG)

TABLE I-2 (cont'd)

4.	Christal Waters	California Waste Management Board (CWMB)
5.	Bill Quinn	Union Oil
6.	Arthur "Duke" Renwick	Ventura County Waste Haulers Association
7.	Tim Nanson	City of Oxnard Assistant Director, Public Works
8.	Mike Kuhn	City of Simi Valley
9.	Yolanda Gomez	City of Oxnard
10.	Robert Dundas	-----

STAFF CONTACTS

1.	Bill Powers	Ventura County Planning Division Solid Waste Program Manager
2.	Kathy Berg	Ventura County Planning Division Solid Waste Program Planner
3.	Harold Colter	Ventura County Environmental Health Division
4.	Greg Smith	Ventura County Environmental Health Division

Source: Ventura County Planning Division 1983

TABLE I-3

CPP

SOLID WASTE MANAGEMENT SUBCOMMITTEE

	<u>MEMBERS</u>	<u>REPRESENTING</u>
1.	Janet Beymer (Chairperson)	Environmental Coalition
2.	Lanie Hatfield (Vice-Chairperson)	American Assoc. of University Women
3.	Lily Kiceniuk	Supervisor Erickson
4.	Louise Rice-Lawson	Building Industry Association
5.	Cynthia Leake	Sierra Club
6.	Rick Farnsworth	Ventura County Flood Control
7.	Debra Hanlon	Environmental Health Division
8.	Loral Bonham	City of Ojai
9.	Jack Curtis	Meiners Oaks Sanitary District
10.	Phyllis Dwire	League of Women Voters
11.	Jean Harris	City of Oxnard
12.	Clyde Evans	City of Simi Valley

INTERESTED PARTIES

1.	Bob Leiter	City of San Buenaventura Planning Department
2.	Dan Pinkerton	Agricultural Advisory Committee
3.	Rex Laird	Farm Bureau

STAFF CONTACTS

1.	Bill Powers	Ventura County Planning Division Solid Waste Program Manager
2.	Kathy Berg	Ventura County Planning Division Solid Waste Program Planner

SOURCE: Ventura County Planning Division 1983

TABLE I-4
TASK FORCE

	<u>MEMBERS</u>	<u>REPRESENTING</u>
1.	Maggie Erickson (Co-Chairperson)	Board of Supervisors
2.	John Flynn (Co-Chairperson)	Board of Supervisors
3.	Councilmember John A. McWherther (meetings #1 and 2) Councilmember Russ Burns (meetings #3 and 4)	City of San Buenaventura
4.	Mayor Nao Takasugi	City of Oxnard
5.	Councilmember Les Maland	City of Santa Paula
6.	Councilmember John H. Morrison, Jr.	City of Ojai
7.	Councilmember Jerry Straughan	City of Moorpark
8.	Councilmember Ann Rock	City of Simi Valley

STAFF CONTACTS

1.	Victor Husbands	Ventura County Resource Management Agency Director
2.	Dennis Davis	Ventura County Planning Division Director
3.	Bill Powers	Ventura County Planning Division Solid Waste Program Manager to June 1984
4.	Thomas Berg	Ventura County Planning Division Solid Waste Program Manager, June 1984 to date
5.	Kathy Berg, Morty Prisament	Ventura County Planning Division Solid Waste Program Planners

Source: Ventura County Planning Division, 1984

4. Encouraging Participation

Throughout the CoSWMP development process, many methods were used to actively encourage open participation by all committee members. Ample time was allotted during monthly meetings for Committee members to formulate findings and recommendations based on information provided by staff. Throughout the plan development process, Committee members thoroughly discussed issues and determined alternative solutions, which were used in formulating Committee recommendations. The following methods were used to encourage participation and inform the public concerning the CoSWMP development process:

a) Tours

Tours of solid waste management facilities were scheduled, including a tour of the Getty Oil Company Land Farm and Walker Brothers Recycling Facility in Saticoy. In addition, a tour was conducted at the Casmalia Class I Landfill site in Santa Barbara County. Tours of these facilities were coordinated by staff members in cooperation with industry representatives.

b) Guest Speakers

Experts in various fields of interest relating to solid waste management made presentations at committee meetings. Presentations were provided throughout the planning process to encourage interest and participation from all members.

This led to a better understanding of current advances in technology, solid waste management operational procedures, problems and issues, technological constraints and regulatory requirements and new programs. Guest speakers provided presentations on VRSD landfill operations. A representative of the Resource Environmental Action Program (REAP) provided a presentation concerning REAP'S resource recovery efforts in Ventura County.

c) Newsletter

A CoSWMP newsletter was compiled and mailed monthly to approximately 350 interested persons and organizations throughout the County. The mailing list included homeowner associations, citizen interest groups, industry representatives, and governmental agencies. The newsletter provided those, not able to attend the formal committee meetings, a CoSWMP update status and summary of committee actions. The newsletter also provided information on new bills and regulations, advances in technology, issues and policies related to development of the County Solid Waste Management Plan.

d) Surveys and Questionnaires

In order to obtain current information required for the planning process, surveys and questionnaires were developed by staff. Information compiled from the surveys were used to evaluate the existing solid waste management system in Ventura County and formulate basic countywide recommendations concerning solid waste management operations and procedures.

C. Public Participation

Public review is a vital part of the CoSWMP update. Therefore in order to provide public input, staff presentations were made to government organizations, citizen action groups, and professional organizations throughout the county. During the CoSWMP update process, presentations were made by staff to the Sierra Club, the Ventura County Environmental Coalition, Ventura County Waste Haulers Association, Society of Women Engineers, University of California, Northridge Consortium in Ventura, Ventura County Agricultural Advisory Committee, Ventura County Association of Governments (VCAG), and the Ventura County Association of City Managers.

Public workshops were scheduled and conducted during the plan review period. A public meeting was held in the neighborhood surrounding the proposed landfill site. The neighborhood meetings included an overview of Ventura County's Solid Waste Management Program, in addition to a detailed discussion of the site evaluation and rating process.

1.4 REGULATIONS, REQUIREMENTS AND PROCEDURES

A. Current Regulations

1. California Solid Waste Management and Resource Recovery Act of 1972

This act requires all counties within the State to develop comprehensive plans for managing solid waste. County Solid Waste Management plans must be developed in accordance with requirements established in Title 14 of the California Administrative Code and all guidelines established by the California Waste Management Board (CWMB).

2. Assembly Bills (AB) 3302 and 3433

Since work began on developing the CoSWMP update, legislation has been passed by the State Assembly that impacts on CoSWMP development and implementation. In September 1982 both Assembly Bills (AB) 3302 and 3433 became law. The effective date of these Bills was January 1, 1983. Basically the Bills require the following actions:

a) General Plan Consistency

Regulations implemented as a result of the passage of these Bills and by the State Assembly require that existing and proposed solid waste sites be consistent with the County General Plan. As a result of subsequently enacted legislation, a General Plan Amendment need not be prepared for Plan adoption wherein only "tentative" sites are identified in the Plan. A General Plan Amendment will, however, be required prior to granting a Conditional Use Permit for a new site.

b) Land Use

This new legislation also requires that land uses authorized adjacent to solid waste sites be compatible with the establishment or expansion of those sites. The County is not allowed to authorize land uses adjacent to solid waste sites if the land use would restrict or preclude the establishment or expansion of the solid

waste site. Therefore, land uses adjacent to solid waste sites have been identified and their compatibility determined by staff for this CoSWMP update.

c) Implementation Schedule

The new legislation requires an implementation schedule be provided in the CoSWMP which includes the approximate dates (short term, mid term, long term) for implementation of CoSWMP programs, policies and recommendations. Therefore, an implementation schedule is provided in Chapter XVII of the CoSWMP.

d) Economic Feasibility

The new legislation also requires that the CoSWMP contain an analysis of the economic feasibility of implementing policies and recommendations. Therefore an economic feasibility analysis is included in Chapter XVI of this CoSWMP update.

e) Fees

The new legislation also authorizes counties to establish fees for CoSWMP development and implementation purposes. However, counties are not required to establish fees for this purpose. Counties can seek and establish other sources of funding as appropriate. Recently a new bill has been proposed and introduced into the assembly that would limit the fees that counties can charge for CoSWMP development and implementation purposes to one cent per ton.

3. State Water Resources Control Board (SWRCB) Regulations

Recently, the SWRCB revised waste discharge regulations regarding requirements for land disposal of waste (California Administrative Code Title 23 - Chapter 3, Subchapter 15; Waste Discharge to Land). Since these regulations were expected to be officially adopted, it became imperative to reflect these changes within the CoSWMP where appropriate. Specific significant changes include a revised waste classification system (Chapter II), more stringent water quality monitoring and waste siting criteria (Chapter XIV).

B. Current Requirements

County Solid Waste Management Plans are required to include the unincorporated areas as well as the incorporated areas of the County. The CoSWMP also identifies local and regional issues. In addition, both current and future solid waste management problems are addressed, and specific recommendations for solving these problems are provided. The updated plan now emphasizes methods for waste reduction, recycling, and addresses waste conversion technology. CWMB Guidelines require that the County solid waste management plan address the following: General information, plan objectives, identification of types and quantities of solid waste, storage of waste, waste collection systems, waste disposal and processing procedures, waste reduction, resource recovery plan administration economic feasibility, enforcement, and implementation.

1. Plan Updates

The California Waste Management Board (CWMB) has developed detailed guidelines and procedures for preparing, revising, reviewing and amending County Solid Waste Management Plans. CWMB Guidelines have been published under Title 14 of the California Administrative Code. These Guidelines and procedures are specified in Sections 17100 - 17165. County Solid Waste Management Plans are required to be updated every three years. The Plan update must be reviewed and approved by the majority of the cities within the County, the Board of Supervisors and the California Waste Management Board. Approval procedures are basically the same for both the update and any amendments to the Plan except that plan updates must be reviewed by both the members of the Ventura County Solid Waste Coordinating Committee (SWCC) and the Countywide Planning Program (CPP) Subcommittee on Solid Waste Management. Active participation by committee members and the public has resulted in the development of a more responsive plan which addresses the concerns and needs of all County constituents involved in the planning process. Therefore public participation has been actively pursued throughout the development of the 1983 CoSWMP Update.

2. Plan Amendments

The County Solid Waste Management Plan (CoSWMP) can be amended when required by the County Board of Supervisors or when deemed necessary by the cities within the County. Prior to adoption or approval of any plan amendment, public hearings must be held by the Board of Supervisors and city councils. Notice of public hearings concerning the amendment must be published in local newspapers, and testimony presented must be made available for public inspection in the Ventura County Government Center. Both CoSWMP updates and amendments are submitted to the Southern California Association of Governments (SCAG) for review at the regional level. CoSWMP updates and amendments must be approved by the majority of the cities within the County which contain a majority of the County's population. Approval of updates and amendments by cities within Ventura County must be by resolution of the governing bodies. Either the resolutions representing city approval, or proof that each city received a copy of the proposed update or amendment at least 90 days before it is submitted for final approval, must be provided to the California Waste Management Board. Cities disapproving of any proposed CoSWMP update or amendment must notify the Ventura County Board of Supervisors and give explicit reasons for disapproval. One copy of the Draft CoSWMP Update or Amendment must be submitted by the County to the California Waste Management Board for preliminary approval. The California Waste Management Board is required to take action within 90 days of submission. If the California Waste Management Board disapproves the update or amendment, the Board of Supervisors will be notified of the parts requiring modification and resubmission. Upon preliminary approval, the County Board of Supervisors must provide 20 copies of the final update or amendment to the California Waste Management Board for final action. All updates and amendments submitted must be accompanied by copies of the approving resolutions from the cities and numerical tabulations of the population figures.

In the event a new solid waste facility emerges which is not mentioned in this plan; or changes or modifications are required to existing facilities which were not anticipated during the time the plan was written, a conformance finding must be made with the plan through the amendment process.

1.5 CoSWMP CONTENTS AND ORGANIZATION

The CoSWMP identifies local waste management issues as well as countywide issues concerning all aspects of solid waste management including recycling and disposal:

Specifically, California Waste Management Board Guidelines require that the County Solid Waste Management Plan address certain specific topics. Therefore, this CoSWMP update addresses general information, identification of solid waste, storage of waste for collection, collection systems, disposal and processing of waste, waste reduction, resource recovery, plan administration, economic feasibility, enforcement and implementation.

In order to address the requirements of the California Waste Management Board in a logical manner, the Ventura County Solid Waste Management Plan has been organized into three volumes as follows:

VOLUME I COUNTY SOLID WASTE MANAGEMENT PLAN

Volume I of the CoSWMP contains Ventura County's Solid Waste Management Plan which is organized into six major parts and four appendices.

Executive Summary

The executive summary provides a concise compilation of CoSWMP policies, recommendations, and proposed projects.

Part A General Information

This part of the CoSWMP provides a discussion of general introductory information including plan development process, plan review procedures in addition to a general overview of the existing Solid Waste Management System. This part also provides information on physical features relevant to the entire County, such as climatic conditions annual precipitation, flood plains, groundwater basins, aquifer recharge zones and other general information.

Part B Non-hazardous Waste Management

This part addresses Solid Waste Management, exclusive of hazardous waste. It also includes information concerning waste generation rates, waste types and composition, storage, hauling, collection, disposal, waste reduction procedures, resource recovery, reuse, recycling options, management of litter and agricultural waste management.

Part C
Hazardous Waste Management

This section addresses the management of hazardous wastes and pesticides within Ventura County. This section includes information on handling and disposal of hazardous waste and provides information on Ventura County's Hazardous Material Response Plan.

Part D
Special Waste Management

Part D provides information concerning the management of waste that may be considered either hazardous or nonhazardous depending on specific waste stream constituents. It also covers waste regulated under both State Solid Waste Management Regulations and Hazardous Waste Management Regulations and includes chapter on infectious waste, sludge, and oil field waste management.

Part E
Waste Management Facilities, Projects and Procedures

Part E provides descriptions of waste management facilities including those currently operating, closed or proposed new facilities. This part also provides general information concerning the CoSWMP disposal site evaluation process, and provides procedures relative to processing facility permits.

Part F
Plan of Action

This part of the CoSWMP contains the plan of action which provides specific information concerning economic feasibility. In addition, information concerning CoSWMP implementation relative to plan policies, recommendations, and projects is also included.

Each operational chapter of the CoSWMP was developed to stand alone and therefore provides information concerning current and proposed regulations in addition to a description and analysis of the existing waste management system. Committee findings and recommendations are specific within each chapter along with definitions of terms used and a listing of references.

VOLUME II APPENDICES TO COUNTY SOLID WASTE MANAGEMENT PLAN

Volume II of the CoSWMP contains five appendices which provide information concerning the County's solid waste enforcement plan and hazardous materials response plan, and standard industrial classifications of industry produced waste. Information is also provided concerning the consultants recommendations and evaluation of potential solid waste disposal sites and the seven issues reviewed by the Task Force prior to completion of the Final Draft CoSWMP.

VOLUME III ENVIRONMENTAL IMPACT REPORT

This volume of the CoSWMP addresses environmental impacts attributed to the implementation of site specific elements of the Plan Information provided in this EIR provides a basis for developing the much more detailed site specific environmental impact reports as required by the State when proponents seek permits on a specific landfill.

CHAPTER II - OVERVIEW OF THE EXISTING SOLID WASTE MANAGEMENT SYSTEM

2.1 INTRODUCTION

Pursuant to state regulations, a countywide solid waste management plan must identify and address issues related to waste types and sources, as well as storage, collection, transfer and disposal. The potential for resource recovery is of special interest, both as a means of reducing waste generated and as an alternative to landfill disposal. This Chapter describes each of these elements in order to convey a comprehensive picture of the existing solid waste management system currently in operation in Ventura County.

2.2 TYPES OF SOLID WASTE

The term solid waste includes three types of waste, non-hazardous waste, hazardous waste and special waste. Solid waste may take the form of either a solid, liquid or gas. Each form can either be non-hazardous or hazardous (Refer to Table II-1). Each type of waste has specific storage, collection, transfer and disposal requirements.

A. Non-Hazardous Waste

Non-Hazardous waste is the most significant waste type when considering volume. Virtually every residence and commercial business produces non-hazardous waste that must be disposed of in some manner. In 1982, 562,289 tons of non-hazardous waste was landfilled in Ventura County (Refer to Chapter IV). This figure includes the north half of County as well as the south half. This represents approximately 1,541 tons of non-hazardous waste daily or an average of 5.5 pounds generated per person per day. The composition of solid waste must be known to accurately evaluate resource recovery potential for Ventura County. Estimates of waste composition are provided in Table II-1.

1. Residential

Almost all residential waste is non-hazardous and is generally referenced to as refuse which includes, food scraps, paper, boxes, and yard trimmings. Residential waste is typically stored in cans, barrels or drums supplied either by the homeowner or the refuse hauler servicing the area. Refuse is usually picked up at the point of generation once a week and deposited in the nearest landfill. According to waste composition estimates, approximately 36 percent of all waste landfilled is residential (Table II-2).

2. Commercial

Most commercial waste is refuse which is collected from shopping centers, food stores, and other retail establishments. Commercial waste is collected in large bins or dumpsters which are serviced by refuse haulers based on the volume of refuse collected and the frequency of collection. Commercial waste is the second largest source of waste landfilled in the county. Approximately 29 percent of all waste landfilled is commercial waste (Table II-2).

TABLE II-1
SOLID WASTE TYPES AND SOURCES

SOLID WASTE SOURCES	PRIMARY SOLID WASTE TYPES			
	Solid		Liquid	
	Non-Hazardous	Hazardous	Non-Hazardous	Hazardous
1. Residential	X			
2. Commercial	X			
3. Agricultural	X	X		X
4. Special	X			
5. Hospital	X	X	X	X
6. Industrial	X	X	X	X

Source: Ventura County Planning Division, 1982

TABLE II-2
ESTIMATE OF WASTE COMPOSITION OF
VENTURA COUNTY LANDFILLS, 1980-2005

(% of total by weight)

<u>Waste Classification</u>	<u>1980</u>	<u>1985</u>	<u>1990</u>	<u>1995</u>	<u>2000</u>	<u>2005</u>
Residential	36	38	39	40	40	40
Commercial	29	29	29	29	29	29
Street Sweepings	10	09	09	08	08	08
Abandoned Autos	00	00	00	00	00	00
Construction & Demolition	08	08	08	08	08	08
Sewage Sludge	04	03	02	02	02	02
Hospital	01	01	01	01	01	01
Industrial	<u>12</u>	<u>12</u>	<u>12</u>	<u>12</u>	<u>12</u>	<u>12</u>
TOTAL	100%	100%	100%	100%	100%	100%

SOURCE: VRSD data, 1982

3. Agricultural

Most agricultural waste is organic in nature and is recycled by the generator directly into the soil as a soil amendment. Agricultural waste which is landfilled mainly consists of material such as plastic film, pots and paper products which do not lend themselves to on-site disposal. These wastes are usually hauled by the generator to the closest landfill, however, some non-hazardous agricultural waste such as triple-rinsed pesticide containers, can only be accepted at specific landfills for disposal after proper rinsing has been accomplished.

An estimated 99.4 percent of agricultural waste generated in Ventura County is either reclaimed or open burned at the site of generation. A recent waste composition survey indicates that agricultural waste accounts for 1.3 percent of the total waste landfilled in the county (Chapter VII, Agricultural Waste).

4. Non-Sewerable Wastes

Sewerable waste is disposed of directly to public sewers and are not addressed in the CoSWMP. It can be noted however, that some waste such as septic tank pumpings and chemical toilet wastes are non-sewerable and require pretreatment prior to disposal in a sewage treatment system. Quantities of non-sewerable liquid wastes generated in Ventura County are as follows:

<u>TYPE</u>	<u>QUANTITY</u> <u>(Tons/yr)</u>
- Chemical Toilet Wastes	3.030
- Septic tank waste	23,740
- RV toilet waste	12
- Mud and water	100

Source: VRSD July 1983 to June 1984 Data

Disposal sites available for non-sewerable, non-hazardous liquid wastes include Simi Valley Landfill and the Montalvo Liquid Waste Treatment Facility (LWTF). These sites are discussed in more detail in Chapters XI and XII.

B. Hazardous Waste

The State of California hazardous waste control act defines hazardous waste as a waste, or combination of wastes, which because of its quantity, concentration, physical, chemical or other characteristics may be either toxic, corrosive, explosive an oxidizer, reducer, irritant or sensitizer.

Hazardous waste, in general, may pose a substantial hazard to human health or the environment when improperly treated, stored, transported or disposed.

26,511 tons of hazardous waste are generated in Ventura County annually (refer to Chapter VIII). Hazardous wastes are disposed of at Class I disposal sites outside the county. There are 25 certified hazardous waste haulers servicing Ventura County (Table II-3).

TABLE II-3

HAZARDOUS WASTE HAULERS IN VENTURA COUNTY

The following is a list of State permitted companies located in Ventura County that may be hired to dispose of hazardous wastes.

1. Vacuum Trucks and Barrel Disposal

BKK Corporation (24 hr.)
25550 237th Street
P.O. Box 3038
Torrance, CA

805-656-2255
Best Pumping Service
P.O. Box 5025
Ventura, CA 93003

213-334-5117
Oil & Solvent Process Co.
P.O. Box 907
Azusa, CA 91702

805-646-5577
Spadys Disposal
P.O. Box 484
Moorpark, CA 93021

805-969-5897
Casmalia Disposal
P.O. Box 5275
Santa Barbara, CA

213-782-2474
G.I. Rubbish Co.
195 W. Los Angeles Ave.
P.O. Box 3615
Simi Valley, CA 93063

805-647-1604
IT Corporation
1620 W. 16th St.
Long Beach, CA

805-648-2413
Gallighen, Inc.
P.O. Box 176
Ventura, CA 93002

(805) 488-3415
Romines Truck & Con.
P.O. Box 697
Port Hueneme, CA

2. Vacuum Service Only

(805) 487-3382 (24 hr.)
Crosby & Overton
2971 Ventura Blvd.
Oxnard, CA 93030

(805) 648-5123
Ecology Control Inc.
2567 N. Ventura Ave.
P.O. Box AA
Ventura, CA 93002

805-643-0348
Reagen's Vacuum Truck
2457 N. Ventura Avenue
P.O. Box 289
Ventura, CA 93002

805-648-3075
Reed Land Clearing
1720 N. Ventura Ave.
Ventura, CA 93001

805-643-0348
OST Trucking
Oilfield Serv. & Trkng.
P.O. Box 237
Ventura, CA 93001

(213) 347-3213
Arbuckle & Sons
6242 Sylvan Dr.
Simi Valley, CA

3. Pesticide Spills

805-487-4961
Western Farm Service
Coastal Division
P.O. Box 1307
Oxnard, CA 93032

4. Oil Field Waste

805-649-1079
Coe's Wastes Oil
Lakewood Oil Svc.
500 Prospect
Oak View, CA

(213) 454-4177
Action Oil Recyclers
518 Latimer Road
Santa Monica, CA 90402

(213) 284-9148
Shields Oil Co.
253 S. Wilson
Covina, CA 91725

805-524-2388
Barnett Trucking, Inc.
136 E. Telegraph Rd.
P.O. Box 416
Fillmore, CA 93015

805-647-1604
Pacific Construction & Maint.
P.O. Box 4129
Ventura, CA 93001

805-647-6020
W.C. Vac. Truck
88 Mara Ave.
Ventura, CA 93004

805-643-1634
Black Gold
Ventura, CA

SOURCE: Ventura County Environmental Health Division, Hazardous Materials
Information Bulletin, 12/16/81

1. Infectious Waste

In Ventura County there are twelve general acute care hospitals, seventeen skilled nursing facilities, one renal care dialysis clinic, seven clinics, one acute psychiatric care institute and numerous medical groups which generate approximately 171.1 tons of infectious waste annually (Chapter X). Ninety-one percent of the infectious waste reported to be generated in Ventura County annually is transported by a licensed contractor and disposed of outside the county. Nine percent of the infectious waste generated in Ventura County is rendered non-infectious by being treated (autoclaved or sterilized) prior to disposal in Class II landfills.

2. Industrial Waste

Industries in the county such as oil and gas extraction, pesticide application, paper and allied products, petro chemical refining, rubber, plastics, machinery, electronics and metal plating industries are all potential sources of hazardous waste. It is estimated that there are between 800 and 1,400 hazardous waste generators in Ventura County (Refer to Chapter VIII).

3. Pesticides

There were 6,109,973 pounds of active pesticide ingredients applied in Ventura County in 1982. Approximately 59 percent of the total amount of active ingredients applied were derivatives of petroleum oil. Since pesticide waste are hazardous, waste generated from commercial pest control operations are disposed of in Class I landfills outside the county. Properly triple-rinsed pesticide containers are not considered hazardous if they have been properly triple-rinsed and therefore can be disposed of at the Toland Road Class II Landfill. Approximately 142 tons of empty triple-rinsed pesticide containers were disposed of in 1983 in Ventura County.

C. Special Waste

Special wastes are defined as any waste which requires special handling. Depending on waste constituents, some waste can be regulated as either hazardous or non-hazardous and therefore may require special handling and could be considered special waste.

Since the following wastes require special handling, they have been addressed as special wastes within Part D of the CoSWMP.

1. Sewage Sludge

Sewage sludges are produced during processing and treating municipal waste water. There are presently sixteen Treatment Plants operating in Ventura County that generate sewage sludge.

Quantities of sewage sludges produced in Ventura County amount to approximately 45,000 tons a year. The majority of this material is handled at the Simi Valley Landfill with the remainder going to the Toland Road Landfill. Some sludges are disposed on land owned by the sewerage agency or is given away to local growers for use as a soil amendment (refer to Chapter XI).

2. Oil Field Waste

There are approximately 404,000 barrels of nonhazardous oil field waste generated in Ventura County annually from oil production operations which require disposal off-site. The most important oil field wastes are; drilling muds which is a dense colloidal (bentonite clay) slurry which circulates through the well bore to lubricate and cool the drill bit. Drilling muds can be either non-hazardous or hazardous depending on the types of cooling fluids used and whether or not heavy metals or other hazardous constituents are present in the mud. Oil production operations also produce large amounts of brines, which for the most part, are reinjected. Some brines that are not reinjected are disposed of at liquid waste treatment facilities such as the Montalvo Liquid Waste Treatment Facility, the Santa Clara Wastewater Company in Santa Paula, and the Chevron Oil Field Brine Treatment Facility in Oxnard. These liquid waste treatment facilities are discussed in further detail in Chapter XII.

2.3 SOLID WASTE OPERATIONS

Storage, collection, transfer and disposal are solid waste operations. At each step in the process different types of wastes require different storage collection, and disposal procedures.

A. Storage and Collection

Storage refers to the temporary on-site holding of waste before it is collected for disposal. Non-hazardous waste storage is regulated by local government. The County as well as the cities have solid waste ordinances for regulating storage.

1. Hazardous Waste

Hazardous waste storage requirements are established by both state and federal regulation and are specific for each type of waste. Collection of hazardous waste is regulated and licensed directly by the State. Both State and federal laws require that any waste classified as hazardous be transported by a company in possession of a hazardous waste haulers permit issued by the State Department of Health Services (DOHS).

2. Non-Hazardous Waste

Collection refers to the transportation of waste from the point of generation to the point of disposal. Non-hazardous waste collection is regulated by local authority and each city and County (for the unincorporated area) has ordinances that set standards for collection. The County Environmental Health Division requires that non-hazardous waste haulers obtain a permit prior to operating anywhere in the County. Some jurisdictions, in addition, negotiate contracts or issue franchises to limit the number of haulers operating within their boundaries.

There are presently twenty-six refuse haulers permitted to operate within Ventura County. A list of these refuse haulers is provided in Table II-4.

A small, but undetermined amount of refuse is delivered by individuals to disposal sites or transfer stations either because, 1) there is no collection available (as in the North Half) or, 2) because a "one-time" large volume of waste needs to be disposed or, 3) individuals dispose their own waste by preference in areas where collection is not mandatory. Some businesses, for economic reasons, deliver their own refuse to a transfer station or disposal site. An estimate of Ventura County's waste composition for 1980-2005 is provided in Table II-2.

Solid waste ordinance requirements are provided on Table II-5. In cities where trash collection and pickup is mandatory, the cost is often "tagged" on to a resident's water or sewer bill. Collection practices within the cities and other service areas are shown on Table II-6. Fee schedules are normally updated every year or at the discretion of each City Council.

B. Transfer and Hauling

Transfer refers to the temporary storage of waste after it has been collected at its point of generation but before it reaches its final point of disposal. Transfer stations, also called anti-litter stations, are generally created either as localized temporary collection points as a convenience to local residents and businesses, or as a major transfer point for shifting waste from smaller to larger, more cost effective vehicles.

There are three anti-litter stations in Ventura County operated by the Ventura Regional Sanitation District (VRSD). These anti-litter stations are located in Ojai, Camarillo and Piru and provide local residences a convenient location for disposing of yard wastes, tree trimmings and bulky items not usually subject to regular collection pick-ups. These transfer stations are designed and located to reduce litter and indiscriminate dumping; they also provide facilities for residents who choose to haul their own refuse. Weekend operating hours encourage the use of these stations. Contractors provide all bins and transport filled bins to the nearest landfill. VRSD personnel operate and maintain these stations on a regular basis.

C. Disposal

Waste disposal sites are operated pursuant to requirements and criteria established by the State Water Quality Control Board (SWQCB) and the California Waste Management Board (CWMB) as well as many other agencies. They are regulated and inspected by the staff of the Regional Water Quality Control Board (RWQCB) and the Ventura County Environmental Health Division.

1. Classes of Solid Waste Sites

For a basic understanding of solid waste management it is necessary to understand how disposal sites are classified. Generally, the terms "Class I, II and III" relate to the physical requirements of the site

TABLE II-4

REFUSE COMPANIES SERVING VENTURA COUNTY

Company	No. of Vehicles
American Rubbish	4
Anatomical Services	1
Anderson Rubbish	4
Asadurian Enterprizes	16
W.D. Bingham	2
Block Disposal	8
Blue Barrel	1
Channel Disposal	5
City of Fillmore	1
E.J. Harrison	45
Geronimo Service Co.	2
Hobbs Drop Box	3
Hobbs Rubbish	3
Marborg Disposal	2
Ojai Rubbish	5
City of Oxnard	43
City of Port Hueneme	4
R&R Rubbish	4
City of Santa Paula	4
Sespe Enterprizes	1
Simi Valley Rubbish	5
Smith Rubbish	2
Spadys Disposal	3
Susana Knolls Disposal	1
Tapo Rubbish	3
Valley Commercial Rubbish	4
Valley Roll Off	2
Varsity Park HOA	1
Ventura Rubbish	20
Walker Bros.	2

Source: Ventura County Environmental Health Division, May 1984 Data

TABLE II-5
SOLID WASTE ORDINANCE REQUIREMENTS

	COUNTY	OJAI	VENTURA	OXNARD	PORT HUE.	CAMARILLO	SANTA PAULA	FILLMORE	SIMI VALLEY	THOU. OAKS
1. PICK-UP - MANDATORY / OPTIONAL										
RESIDENTIAL	OPTIONAL	OPTIONAL	OPTIONAL	MANDATORY	MANDATORY	MANDATORY	OPTIONAL	OPTIONAL	MANDATORY	MANDATORY
COMM.-INDUST.	OPTIONAL	OPTIONAL	OPTIONAL	MANDATORY	OPTIONAL	OPTIONAL	OPTIONAL	OPTIONAL	OPTIONAL	MANDATORY
2. CONTAINER REQUIREMENTS										
RESIDENTIAL										
SIZE	55 gal.	up to 55 gal.	55 gal.	20-40 gal.	20 - 36 gal.	55 gal.	36-45 gal.	40 gal.	45 gal.	45 gal.
NUMBER	1	1	1-3	1-9	*	1	1-3	2	5	4
WEIGHT	*	100 lbs. max.	*	60 lbs.	70 lbs.	80 lbs.	80 lbs.	80 lbs.	75 lbs.	*
COMM. - INDUST.										
SIZE	SAME AS ABOVE	SAME AS ABOVE OR BINS USED	UP TO CUSTOMER AND CONTRACTOR	55 GAL. OR BINS, UNLIMITED NO.	UP TO 35 gal. OR 36-55 gal. DEPENDS ON CONTRACTORS REQUIREMENTS	UP TO CONTRACTORS REQUIREMENTS	UP TO CONTRACTORS REQUIREMENTS	UP TO CONTRACTORS REQUIREMENTS	UP TO CONTRACTORS REQUIREMENTS	UP TO CONTRACTORS REQUIREMENTS
NUMBER	OR BINS USED			VARIES						
WEIGHT										
3. PLACEMENT OF CONTAINERS										
RESIDENTIAL	CURBSIDE / ALLEY	CURBSIDE	CURBSIDE / ALLEY	CURBSIDE / ALLEY	CURBSIDE / ALLEY	CURBSIDE / ALLEY	EASILY ACCESSIBLE	CURBSIDE / ALLEY	CURBSIDE / ALLEY	CURBSIDE / ALLEY
COMM. - INDUST.	EASILY ACCESSIBLE									→
4. MINIMUM FREQUENCY OF COLLECTION										
RESIDENTIAL	1/WEEK									→
COMM. - INDUST.	1/WEEK	1/WEEK	1/WEEK	1-7 WEEK	1/WEEK	EVERY 3 DAYS	1/WEEK		1/WEEK	1/WEEK
5. TYPE OF AGREEMENT										
RESIDENTIAL	NONE	FRANCHISE	FRANCHISE	CITY	CITY	FRANCHISE	CITY	CITY/CONTRACT	FRANCHISE	FRANCHISE
COMM. - INDUST.	NONE	FRANCHISE	FRANCHISE	CITY	CONTRACT	FRANCHISE	CITY	FRANCHISE	NONE	FRANCHISE

* INFORMATION UNKNOWN

SOURCE: Ventura County Planning Division, January 1982

TABLE II - 6
DESCRIPTION OF COLLECTION SERVICES BY COMMUNITY

	OJAI VALLEY	VENTURA	OXNARD	PORT HUE	CAMARILLO	SANTA PAULA	FILLMORE	SIMI VALLEY	THOUS'D OAKS	OAK PARK	MOORPK	PIRU	POINT MUGU NAS	P. H. NAVAL BAT. CNST. CENTER	CHANNEL ISLAND WTR. DIST.
1. NO. OF COLLECTORS SERVING THE AREA															
PUBLIC	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0
PRIVATE	2	2	0	1	2	3	1	3	7	3	2	1	1	1	1
2. SERVICE CHARGE															
RESIDENTIAL AND COMMERCIAL - INDUSTRIAL	VARIES DEPENDING UPON CONTAINER SIZE, NUMBER, AND FREQUENCY OF COLLECTION →														
3. PRIMARY DISPOSAL SITE															
*	SANTA CLARA	SANTA CLARA	SANTA CLARA	SANTA CLARA	SANTA CLARA	TOLAND	TOLAND	SIMI	SIMI	SIMI	SIMI	TOLAND	SANTA CLARA	SANTA CLARA	SANTA CLARA
4. HAULING DISTANCE (ONE WAY)															
	24 MI.	9 MI.	5 MI.	6 MI.	10 MI.	6.5 MI.	7 MI.	8 MI.	12.5 MI.	12.5 MI.	6 MI.	14.5 MI.	6 MI.	6 MI.	5 MI.

* SANTA CLARA LANDFILL IS NOW FILLED TO CAPACITY. COMMUNITIES WHICH ONCE USED THIS LANDFILL NOW USE THE SANTA CLARA LANDFILL EXTENSION KNOWN AS THE VENTURA COASTAL LANDFILL.

SOURCE: Ventura County Planning Division

while the terms "Group 1, 2 and 3" relate to the kinds of wastes discharged to land. Disposal of solid or liquid wastes is allowed only at sites which have been approved by the Regional Water Quality Control Board, and for which waste discharge requirements have been prescribed unless a waiver has been granted in accordance with Section 2540 of Article 4 in the California Administrative Code.

Class I - Class I waste management units are to be located in areas where material geologic features provide optimum conditions for isolation of wastes from waters of the State. These waste management units are not to be located in areas where natural geologic material could allow vertical movement of waste and leachate from the waste management unit to waters of the State. Natural or artificial barriers are to be used to prevent lateral movement of fluids, including waste and leachate. These units (sites) are to be immediately underlain by a substantial thickness of natural geologic materials which have permeability of not more than 1×10^{-7} cm/sec.

With certain exceptions Class I sites or units are to be located outside the 100 year floodplain and are required to have a 200 foot setback from any known holocene fault. New and existing Class I units are required to be located outside areas of potential rapid geologic change and new disposal units are to be located outside areas subject to tsunamis, seiches and surges.

Class II - Class II waste management units (sites) are to be located in areas where site characteristics and installed features isolate waste from the waters of the State and are to be underlain by a substantial thickness of soil or a liner system that will provide a permeability of not more than 1×10^{-6} cm/sec. Natural or artificial barriers are to be used to prevent lateral movement of fluids. Class II waste management units (sites) are to be designed, constructed, operated and maintained to prevent inundation or washout due to 100 year floods. These waste management units may be located in areas of potential geologic change only if containment structures are designed, constructed, and maintained to preclude failure. These waste management units may be located in areas subject to tsunamis, seiches, and surges if designed, constructed and maintained to preclude failure due to such events.

Class III - Class III waste management units (municipal waste sites) are to be located in areas where site characteristics provide adequate separation between non-hazardous solid waste and ground and surface waters. These waste management units are to be sited in areas where soil characteristics, distance from waste to groundwater and other factors will ensure no impairment of beneficial uses of groundwater underneath or adjacent to the area or of surface water. Factors that should be evaluated include: size of the waste management unit, permeability and transmissivity of underlying soils, depth to groundwater and variations in depth to groundwater, background quality of groundwater, current and anticipated use of the groundwater and annual precipitation. Since site characteristics alone do not ensure protection of the quality of groundwater or surface water, Class III landfills that may impact groundwater are required to have a single clay liner with permeability of 1×10^{-6} cm/sec. or less.

New Class III landfills are to be designed, constructed, operated and maintained to prevent inundation or washout due to 100 year floods. In addition, these sites are not to be located on a known holocene fault. These waste management units may only be located within areas of potential rapid geologic change if containment structures are designed, constructed, and maintained to preclude failure.

A copy of the more stringent revised California Administrative Code, Title 23, Subchapter 15, final proposed regulations can be obtained by calling the office of the Chief Counsel, State Water Resources Control Board (SWRCB) at (916) 322-7732 or by writing to:

State Water Resources Control Board
901 P Street
P.O. Box 100
Sacramento, CA 95801

These regulations had not been finally adopted as of October 1984.

2. Groups of Solid Wastes

Group 1 Wastes

Group 1 wastes contain hazardous substances which can significantly impair the quality of usable waters (i.e., chemical waste).

Group 2 Wastes

Group 2 wastes consist of or contain mainly biologically decomposable material which does not include toxic substances nor those capable of significantly impairing the quality of usable waters (i.e., refuse).

Group 3 Wastes

Group 3 wastes are basically inert materials such as building construction wastes and demolition debris.

D. Resource Recovery

Resource recovery is a multimillion dollar business in Ventura County. In 1982, an estimated 5 to 6 million dollars worth of materials were recycled, considering average prices for those materials reported for the survey. The major revenue producers in the County during 1982, were cardboard, aluminum cans, and newspapers. Many other less valuable materials such as glass, mattresses, wood chips, and plastics which were not reported as being recycled in 1975, were reported as being recycled for the 1982 survey. In Ventura County, the large diversification of materials being recycled in 1982, as compared to that reported for the 1976 CoSWMP update provides a more stable and healthier resource recovery program that will more likely withstand price and supply/demand fluctuations in the future.

In 1975, non-profit organizations made up the majority of recyclers in the County. The 1982 survey indicates that, as a result of community and environmental action groups, more residents, commercial businesses and organizations have joined the ranks of recyclers.

Based on results of the 1982 survey, resource recovery efforts in Ventura County account for approximately 19 to 22 percent of the 562,289 tons of waste that is landfilled (Chapter IV). This figure includes the north half of the County. Survey results indicate that 124,060 tons of materials were recovered or recycled in Ventura County during a 12 month period spanning 1981-1982. This translates to a savings of approximately

24 acre feet or 240,000 cubic yards of landfill space (based on 10,000 cubic yards of waste per acre). Newspaper recycling alone can account for saving of 192,360 trees, based on 15 trees saved per ton of newspaper recycled (refer to Chapter IV).

E. Energy Recovery

1. Methane Recovery

The recently closed Santa Clara landfill site has undergone test drilling to determine the quality and quantity of methane gas available. It has been determined that the site's methane gas resources can be valuable. Gas can be produced by a private company, who will pay the City of Oxnard royalties by selling the gas to Southern California Edison. Such operations have been successfully carried out in other areas and should be explored further for Ventura County. Any new landfill will probably be required to install a gas recovery system, both to mitigate air quality emissions and to recycle a potentially valuable resource.

2. Waste to Energy

A waste to energy facility was formally planned, however it is now inactive. The 3-way plan to establish the plant included VRSD providing the refuse to a private firm who would operate a waste-to-energy plant, with the resultant energy being sold to Southern California Edison. This waste-to-energy plant was scheduled to go into operation by 1986.

More specific information concerning different types of wastes and waste management operations conducted in Ventura County is provided in other chapters of the CoSWMP. Readers are urged to refer to specific chapters for more details.

CHAPTER III - PHYSICAL FEATURES

3.1 INTRODUCTION

The development of a local plan for solid waste management requires a thorough knowledge and assessment of the specific physical features of the location in which the total solid waste management system (storage, collection, processing, and disposal) must operate. Some physical factors operate to the disadvantage of solid waste management. For instance, high groundwater tables, excessive slopes or lack of nearby suitable cover materials tend to reduce the availability of land for disposal of solid wastes. Land use demands for urban growth complicate siting of disposal facilities close to centers of solid waste generation. Population growth and distribution, income levels, industrial growth and distribution, transportation routes and traffic, air and water quality standards, environmental constraints and priorities, and similar factors all enter into considerations related to the development of proper plans. This chapter presents a variety of environmental factors and physical features characteristic to Ventura County.

3.2 PHYSIOGRAPHY

The South Half of Ventura County includes over 580,000 acres located in the Transverse Range Geomorphic Province. The mountains and valleys trend nearly east-west (Figure III-1). The physiography can be described by covering the following features:

A. Mountains

The principal mountains in the Southern Half of Ventura County are the Santa Ynez Mountains, Topa Topa Mountains, and Santa Monica Mountains. Smaller mountain areas include Sulphur Mountain, Santa Paula Ridge, Hopper Mountain, South Mountain, Oak Ridge, Santa Susana Mountains and the Simi Hills. Mountainous areas are generally maturely dissected and rugged, with relief ranging from 500 to 2,000 feet. Soil cover is generally thin, however some flat areas and some areas of rolling hills can be found where the soil cover is quite thick.

B. Valleys

Many valleys are largely the result of structural movement. The major valleys include the Santa Clara River Valley, Ventura River Valley and the Calleguas Creek drainage area. The Santa Clara River Valley is the most prominent valley in Ventura County and is a downfolded and faulted trough. Deposition by the Santa Clara River and by tributaries has been fairly continuous, while terraces on the slopes provide evidence of periodic uplifting of adjacent slopes with respect to the valley floor. Major tributaries are the Piru, Sespe, and Santa Paula Creeks with headwaters originating in the Pine Mountain and Topa Topa Mountain areas. Small tributaries dissect adjacent mountains deeply and drain directly into the Santa Clara River (Figure III-1). These creeks generally develop alluvial fans at their mouths.



PHYSIOGRAPHY

THERE ARE 1884 SQ. MILES
IN VENTURA COUNTY

SOURCE: VENTURA COUNTY FLOOD CONTROL DISTRICT 1983

COUNTYWIDE SOLID WASTE MANAGEMENT PROGRAM

Figure III - I

Streams in the Ventura River drainage area originally drained westward and eastward, respectively, toward the Ventura River. Erosion of the Ventura River, and San Antonio and Coyote Creeks has captured these drainages so that they now drain in a southerly direction. Ojai Valley is a structural depression in which over 700 feet of fluvial sediments have been deposited. The Coyote Creek drainage area and the Upper Ojai Valley are also located in structural depressions. The north-south trending Ventura River Valley is essentially an erosional feature, covered by a relatively thin bed of alluvial fill. Terrace deposits indicate that the valley has undergone at least two cycles of erosion.

The Calleguas Creek drainage includes Las Posas Valley, Simi Valley and several minor valleys. Las Posas Valley extends eastward from the Oxnard Plain almost to Simi Valley, and lies between South Mountain and Oak Ridge to the north and the Camarillo and Las Posas Hills to the south. The valley exhibits a broad upland topography and generally slopes to the south. Both erosion and deposition are occurring within parts of the area at the present time. It is possible that Arroyo Las Posas once flowed westward from the vicinity of Somis, north of the Camarillo Hills, to the Oxnard Plain. If so, it was probably diverted south at Somis into the valley which is presently occupied by alluvial fans extending from South Mountain in the area northwest of Somis. Simi Valley is a structurally depressed area in which over 700 feet of alluvial sediments have accumulated. Simi Valley has undergone more than one cycle of erosion as indicated by the exposure and present dissection of the older alluvium on the southwest side of the valley. The Simi Fault, extending along the north side of the valley, has apparently been active during deposition of most of the alluvial fill. Thick clay beds within the western portion of the valley indicate that temporary lakes were probably formed by the uplifted mass north of the Simi Fault during deposition.

The Conejo Valley is a broad valley which was a part of a larger generally east-west trending valley system. It has been captured by headward erosion of Conejo Creek which was probably aided by northward tilting of the Conejo Valley area and rock fracturing. Hidden and Potrero Valleys are also remnants of old erosional valleys which were structurally controlled in an east-west system. Tierra Rejada and Santa Rosa Valleys are both essentially erosional features, although up to 200 feet of alluvium has been deposited in Santa Rosa Valley.

Along the County's North Coast, Rincon Creek and other small creeks dissecting Rincon and Red Mountains drain southerly into the Pacific Ocean.

Along the Southern Coast, Big Sycamore Creek and other canyons dissecting Boney Mountain, flow southward into the Pacific Ocean.

C. Coastal Plain

The Coastal Plain has been formed by deposition of sediments from the Santa Clara River and from the Calleguas Creek drainage area. The land surface resembles a large compound alluvial fan having one apex near Saticoy and another near Somis. A group of smaller, but steeper, alluvial fans have been deposited by the small creeks draining the hills north of the area, forming an alluvial piedmont. Terrace remnants along the northern edge of the coastal plain indicate uplift of this part of the plain.

D. Climate

A Mediterranean climate prevails in Ventura County. Typically, this climate is characterized by hot, dry summers followed by cool, wet winters. Temperature range generally increases with distance from the coast. Temperatures are rarely below freezing in the Ventura and Santa Clara River Valleys, and Oxnard Plain area. Fog often covers the coastal valleys during the summer months.

E. Precipitation

More than eighty percent of precipitation occurs from November through March. The majority falls as rain, although mountainous areas experience occasional snowfall. Long-term mean precipitation (Figure III-2) ranges from 12 inches in Pleasant Valley to 38 inches in the Santa Ynez Mountains and averages 14 to 18 inches in valleys along the coast and low hills within the major drainage areas. During a wet year, such as the water year 1977-78 (Figure III-3), precipitation ranges from 30 inches to 40 inches in valleys and low hills.

Areas with annual precipitation of less than 30" are generally more desirable for waste disposal sites because there is a potential for less leachate to be produced (Reference III-1).

F. Evaporation

Pan evaporation (Figure III-4) ranges from less than 60 inches in most of the valleys and the coastal plain to more than 70 inches in Simi Valley.

Areas with high evaporation rates can be more favorable for landfill sites, since higher evaporation makes soils drier, resulting in less deep percolation. Liquid wastes such as sludges will therefore solidify at a more rapid rate.

3.3 FLOOD PLAINS

Areas subject to inundation are generally referred to as flood plains. Floods are usually referred to in terms of their frequency of occurrence and corresponding discharge rate. For example, the 100-year flood for a particular channel is the flow rate which has a probability of being equaled or exceeded once in 100 years.

All watercourses in Ventura County will overflow and develop flood plains or create a hazard to adjacent ground through erosion and deposition at some point in time. Major flood plains which have been documented are indicated in Figure III-5. The flood plain limits shown are those of 100-year flood.

The amount of damage caused by a flood depends on the depth of inundation, the velocity and duration of the flood, the debris production of the watershed, and the erodibility of the bed and banks of the watercourse.

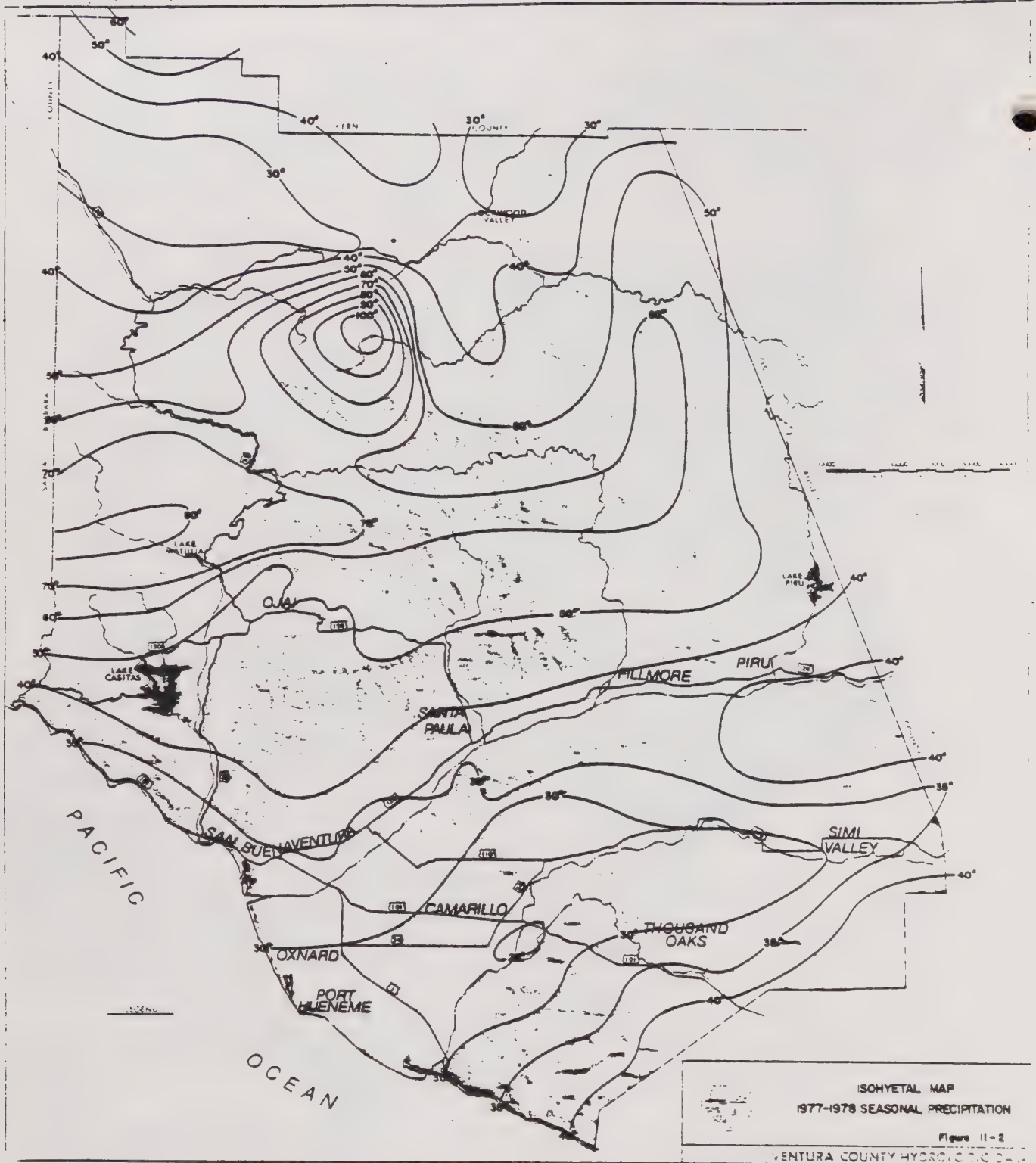


MEAN PRECIPITATION

SOURCE: VENTURA COUNTY
FLOOD CONTROL DISTRICT 1981

COUNTYWIDE SOLID WASTE MANAGEMENT PROGRAM

Figure III - 2

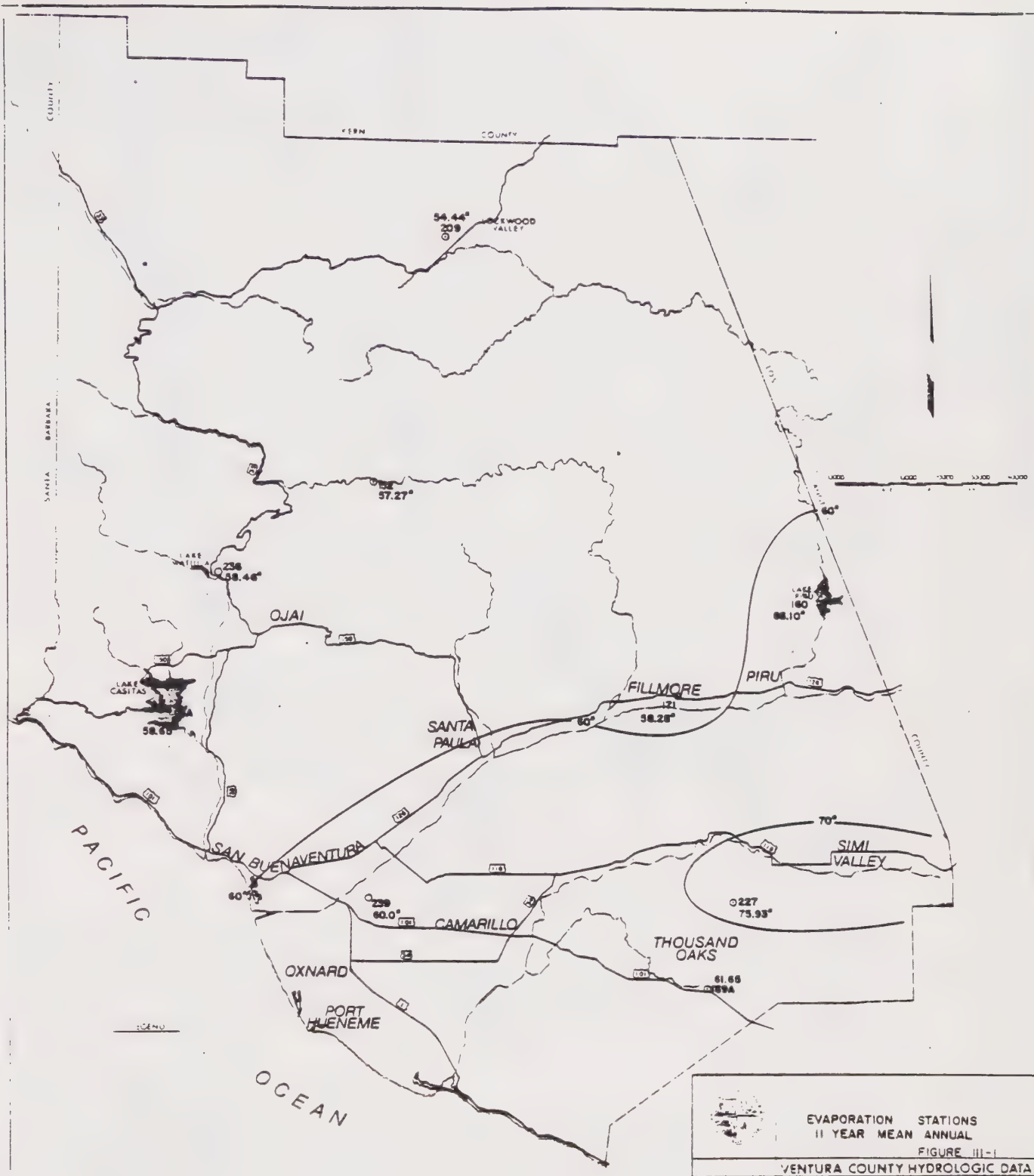


SEASONAL PRECIPITATION

SOURCE: VENTURA COUNTY
FLOOD CONTROL DISTRICT 1981

COUNTYWIDE SOLID WASTE MANAGEMENT PROGRAM

Figure III-3



MEAN ANNUAL EVAPORATION

COUNTYWIDE SOLID WASTE MANAGEMENT PROGRAM

SOURCE: VENTURA COUNTY
FLOOD CONTROL DISTRICT 1981

Figure III - 4

When locating solid waste disposal sites, the potential for flooding must be recognized. The direct effects of flooding on a disposal site include inundation and erosion of banks causing exposure and removal of contained waste materials. Secondary effects include the deposition of the displaced material on downstream properties as well as an increase in the leachate produced from the site after inundation. Placement of a levee or dike to protect the disposal site can cause a displacement of flood waters onto neighboring properties. The impacts can include increased velocity of flow, greater depth of inundation, and an enlargement of the flood plain.

The State Water Resources Control Board requires that Class I disposal sites be protected from inundation in accordance with requirements of the Regional Water Quality Control Board (RWQCB), and that they be protected from washout at all times (Reference III-1). These requirements are more restrictive than those for Class II disposal sites. Class II sites must be protected by natural or artificial barriers to assure protection from any washout and from inundation by 100-year floods or tides (Reference III-1). The least restrictive requirements are for Class III disposal sites, where the RWQCB requires that erosion of deposited material be prevented (Reference III-1).

Because all classes of disposal sites must be protected from erosion of contained materials, it is recommended that they are not located in the 100-year flood plain areas, unless permanent protection is provided. If it is necessary to locate landfills within flood plain areas, then certain criteria should be followed to develop the site including:

- o Elevating the site above potential flood levels
- o Providing adequate flood protection to the site, and long-term maintenance of the facilities installed
- o Providing adequate mitigation of adverse impacts upon other properties

3.4 SURFACE WATER

A. Flows

Major rivers in the Southern Half of Ventura County have generally high rates of flow during the rainy period, but very low flows during the summer season. The quality of surface water depends upon quantity of flow with the amounts of total dissolved solids (TDS) being inversely proportional to the flow rate.

B. Water Quality

At the present time, surface water quality data is inadequate to construct a detailed map of water quality in the Southern Half of Ventura County, and as a result, this data should be collected and evaluated during more specific siting studies. Areas of poor surface water quality are more desirable for landfill siting than those which have good water quality. Therefore, only general information on water quality for major Ventura County tributaries is provided.

In the North Coast drainage area, quality of water in small creeks except Rincon Creek is mostly poor, making it unsatisfactory for most beneficial uses.



Figure III-5

flood plains

100 year

SOURCE: ARMY CORPS OF ENGINEERS

COUNTYWIDE SOLID WASTE MANAGEMENT PROGRAM

Within the Ventura River drainage, the quality of Upper Ventura River water above Foster Park is good with the TDS generally less than 650 mg/l. This water is of acceptable quality for all beneficial uses. Water quality of the Lower Ventura River is good with an average TDS of 850 mg/l. Surface water quality in Canada Larga Canyon is poor, having a TDS of more than 2,500 mg/l.

In the Santa Clara River, the average TDS varies from 700 mg/l in the Fillmore basin to 1,150 mg/l at the County line to about 990 mg/l near the Saticoy spreading grounds. Mineral quality of Santa Clara River water is generally within the State Class II (good to injurious) for irrigation use and is usable for most municipal and industrial (M&I) purposes. Water quality of major Santa Clara River tributaries, i.e. Piru, Sespe and Santa Paula Creeks, is better with an average TDS of 410 to 490 mg/l. Mineral water quality of these flows is generally good to excellent for all beneficial uses. On the other hand, water quality of small tributaries draining into the Santa Clara River is mostly poor with TDS ranging from less than 2,000 to more than 5,000 mg/l, making it unsuitable for most beneficial uses.

In the Calleguas Creek drainage area, water quality of natural flows varies because of blending with effluent from sewage treatment plants (STP). Water quality of Arroyo Simi above Simi Valley STP is excellent with a TDS of less than 500 mg/l. Below the STP, TDS of Arroyo Simi ranges from 400 mg/l during high flows to over 1,300 mg/l for very low flows. The TDS of Conejo Creek below Hill Canyon STP is about 880 mg/l. In Calleguas Creek near Camarillo State Hospital, TDS ranges from 440 mg/l during high flows to 910 mg/l during low flows and averages 670 mg/l.

Obviously surface water of usable quality should be protected from degradation by landfills.

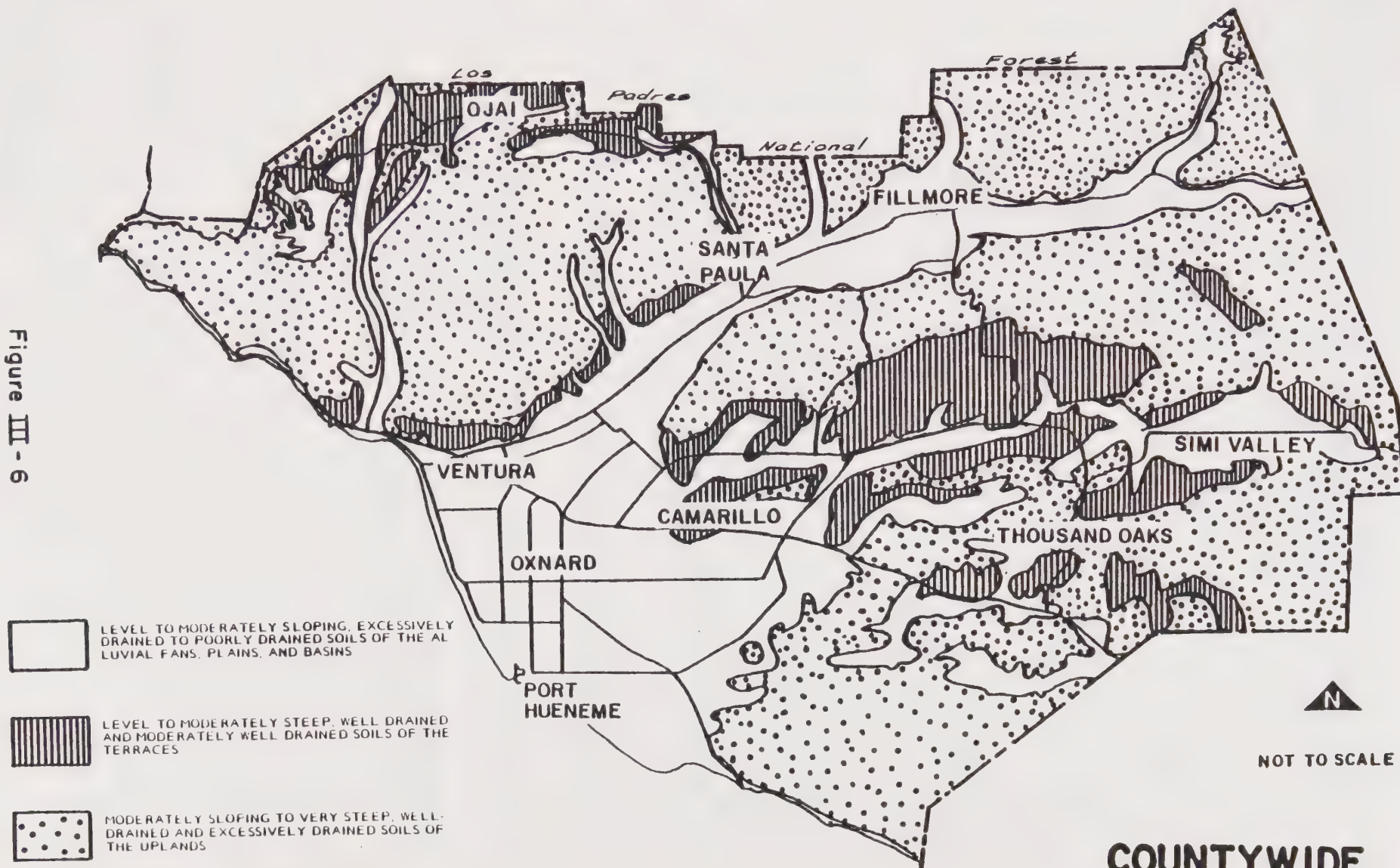
3.5 SOILS

The general soils map (Figure III-6) was adapted from the "Soil Survey, Ventura Area, California" published by the United States Department of Agriculture, Soil Conservation Service in April 1970. This map provides information indicating that each soil association has a specific runoff coefficient and range of permeability. Permeability of soil is a measure of its ability to transmit fluid, such as water, under a hydropotential gradient, customarily expressed in centimeters per second (cm/sec.). Soils of higher runoff coefficient and slower permeability ranges (tighter soils) (10^{-6} cm/sec. to 10^{-8} cm/sec.) reduce or prevent transmission of leachate and gas migration into usable ground water reservoirs. They also serve as excellent landfill cover materials because they greatly reduce downward percolation of rainfall and applied water which minimizes leachate production and lateral migration. For this study soils in the Southern Half of Ventura County were divided into three groups based on slope steepness as follows:

Group 1. (Level to moderately sloping areas)

The soils in these areas cover rivers, valleys, and the coastal plain and are divided into four soil associations, which vary from those that are excessively drained and highly permeable to those that are poorly drained and slowly permeable.

Figure III - 6



GENERAL SOIL MAP

SOURCE: U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

COUNTYWIDE SOLID WASTE MANAGEMENT PROGRAM

Group 2. (Level to moderately steep areas)

Soils in these areas cover low hills, uplands and foothills. These soils are divided into two soil associations which vary from those which are well drained and moderately permeable to those which are moderately well drained and slowly permeable.

Group 3. (Moderately sloping to very steep areas)

Soils in these areas cover hills and high mountains. These soils are classified into eight soil associations which vary from those which are excessively drained and slowly permeable to those which are well drained and moderately slowly permeable.

Groups 2 and 3 are generally more suitable for landfill sites, however, more detailed, site specific studies are necessary prior to final selection of future landfill locations.

Areas underlain and surrounded by an adequate thickness and quantity of low permeability materials (group 2 and 3) are definitely more desirable as landfill locations.

3.6 GEOLOGIC FEATURES

Geologic formations within the Southern Half of Ventura County consist of sedimentary and volcanic rocks from Upper Cretaceous to Recent age. Geologic units are briefly described in ascending order of geologic age as depicted in the stratigraphic column (Figures III-7 and III-8).

Upper Cretaceous marine formations are exposed in the Simi Hills and the Santa Susana Mountains and consist of sandstone, shale and conglomerate. Permeable zones in some areas yield a limited amount of variable quality water.

Palaeocene and Eocene formations are marine sandstone, shale and conglomerate which are generally nonwater-bearing except at some locations around Simi Valley.


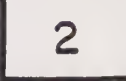


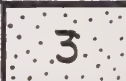

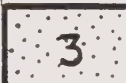


The Oligocene Sespe formation is a nonmarine sandstone, conglomerate and shale, and is locally fresh water-bearing in the Ventura River drainage area and in Simi Valley.

Miocene and Pliocene formations consist of marine sandstone, shale, some conglomerate and volcanic rocks. They are generally nonwater-bearing, except in the Santa Monica Mountains where the Conejo volcanic rocks yield variable quantities of fresh water to wells.

Pleistocene formations consist of marine and continental sand, gravel, and clay. Permeable zones, such as the Fox Canyon and Grimes Canyon aquifer zones, yield large amounts of ground water of good quality in the Las Posas, Pleasant Valley and Oxnard Plain areas.

Recent formations consist of sand, gravel, and clay in stream channels, flood plains, coastal plain, and terraces. They are highly permeable and where saturated, supply large quantities of fresh water to many wells. These areas are not good locations for landfill operations.

STRATIGRAPHIC COLUMNS *

AGE		VENTURA COUNTY SOUTH HALF		WATER-BEARING CHARACTER AND WATER QUALITY		GROUP
QUATERNARY	RECENT				FRESH WATER - BEARING:	
	PLEISTOCENE	UPPER	Stream deposited clay, sand and gravel, 0-700' thick.		UNCONFINED	
			Unconformity		CONFINED	
		LOWER	SAN PEDRO FORMATION: Marine and non-marine clay, sand and gravel, 4000' thick.		POOR WATER QUALITY UNCONFINED	
TERTIARY			SANTA BARBARA FORMATION: Marine clay and silt, 4000' thick.			
	PLIOCENE		PICO FORMATION: Shale, sandstone and conglomerate, 12000' thick.		GENERALLY, NONWATER BEARING OR CONTAINING SALINE WATER	
	MIOCENE	UPPER	"SANTA MARGARITA" FORMATION: Shale and sandstone, 1800' thick.			
		MIDDLE	MODELO SHALE: Brown to white, silty shale 1500' thick.		LOCALLY, FRESH WATER BEARING	
			TOPANGA FORMATION AND CONEJO VOLCANICS			
		LOWER	RINCON FORMATION: Gray, brown, nodular marine shale, 2000' thick.		GENERALLY, NONWATER BEARING	
			VAQUEROS FORMATION: Well cemented sandstone, interbedded shale, 300-450' thick.			
			Unconformity			
	OLIGOCENE		SESPE FORMATION: Continental, massive sandstone conglomerate and red and green shale, 4500' thick.		LOCALLY, FRESH WATER BEARING	
	EOCENE	UPPER	COLDWATER SANDSTONE: Marine 2200' thick.			
			COZY DELL SHALE: Marine, 3800' thick. Large sandstone member north of Ventura river.			
			MATILAJA SANDSTONE: Marine, 2400' thick.			
LOWER		JUNCAL SHALE AND SANDSTONE: Marine, 5000' thick. Includes basal limestone.		GENERALLY, NONWATER BEARING OR CONTAINING SALINE WATER		
		Unconformity				
PALEOCENE		Missing or not recognized.				
CRETACEOUS		Marine siltstone, shale and conglomerate, 5000' thick. Base not exposed.		LOCALLY, FRESH WATER-BEARING		

*FROM STATE WATER RESOURCES BOARD VENTURA COUNTY INVESTIGATION
Bulletin No. 12, October 1953 with revisions by VCFCD, 1975.

58 SOURCE: VENTURA COUNTY FLOOD
CONTROL DISTRICT 1983

Figure III - 7 (LEGEND FOR FIGURE III - 8)

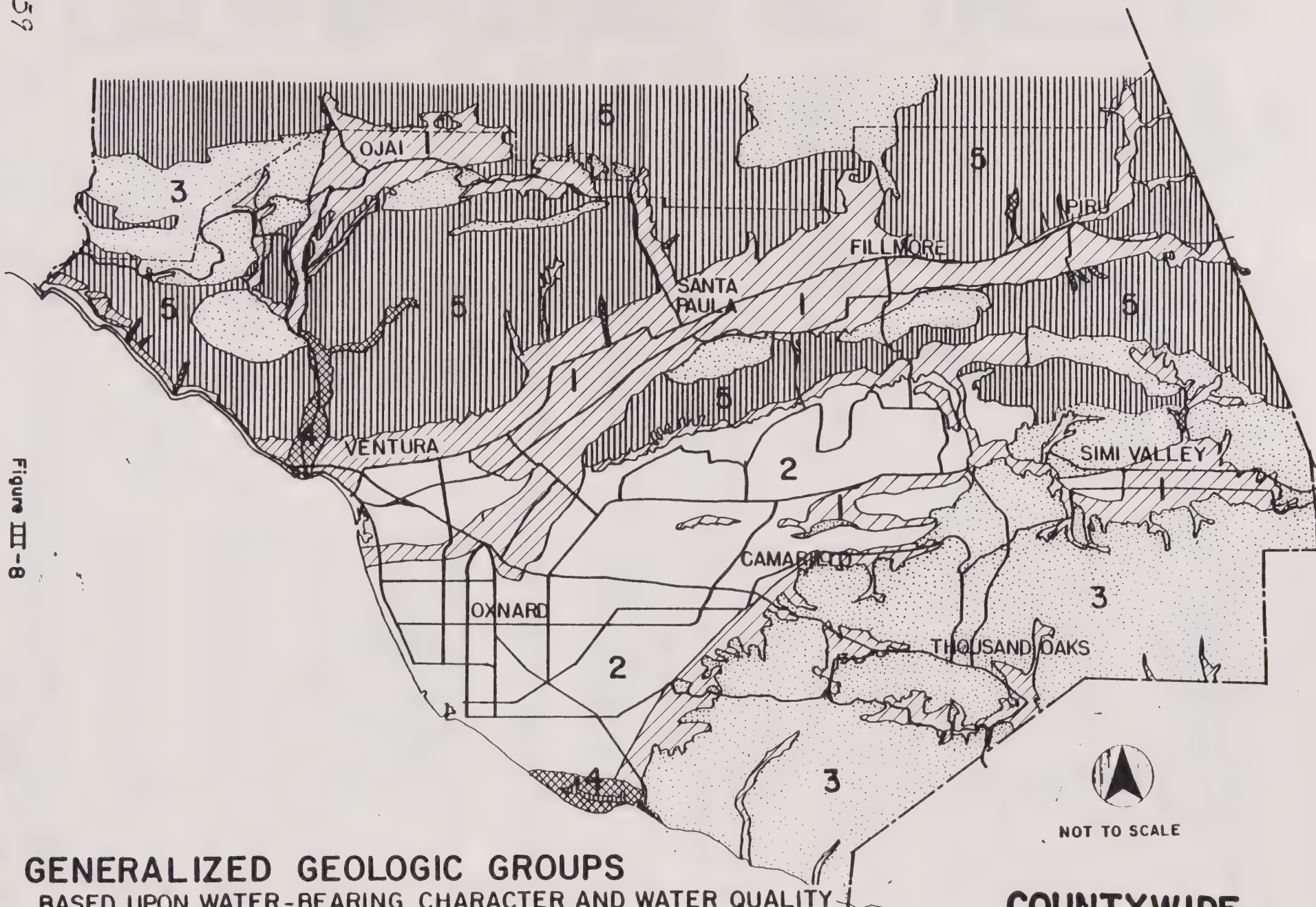


Figure III-8

GENERALIZED GEOLOGIC GROUPS

BASED UPON WATER-BEARING CHARACTER AND WATER QUALITY
(FIGURE III-7)

SOURCE: VENTURA COUNTY PUBLIC WORKS AGENCY 1983

COUNTYWIDE SOLID WASTE MANAGEMENT PROGRAM

3.7 GROUND WATER RESOURCES

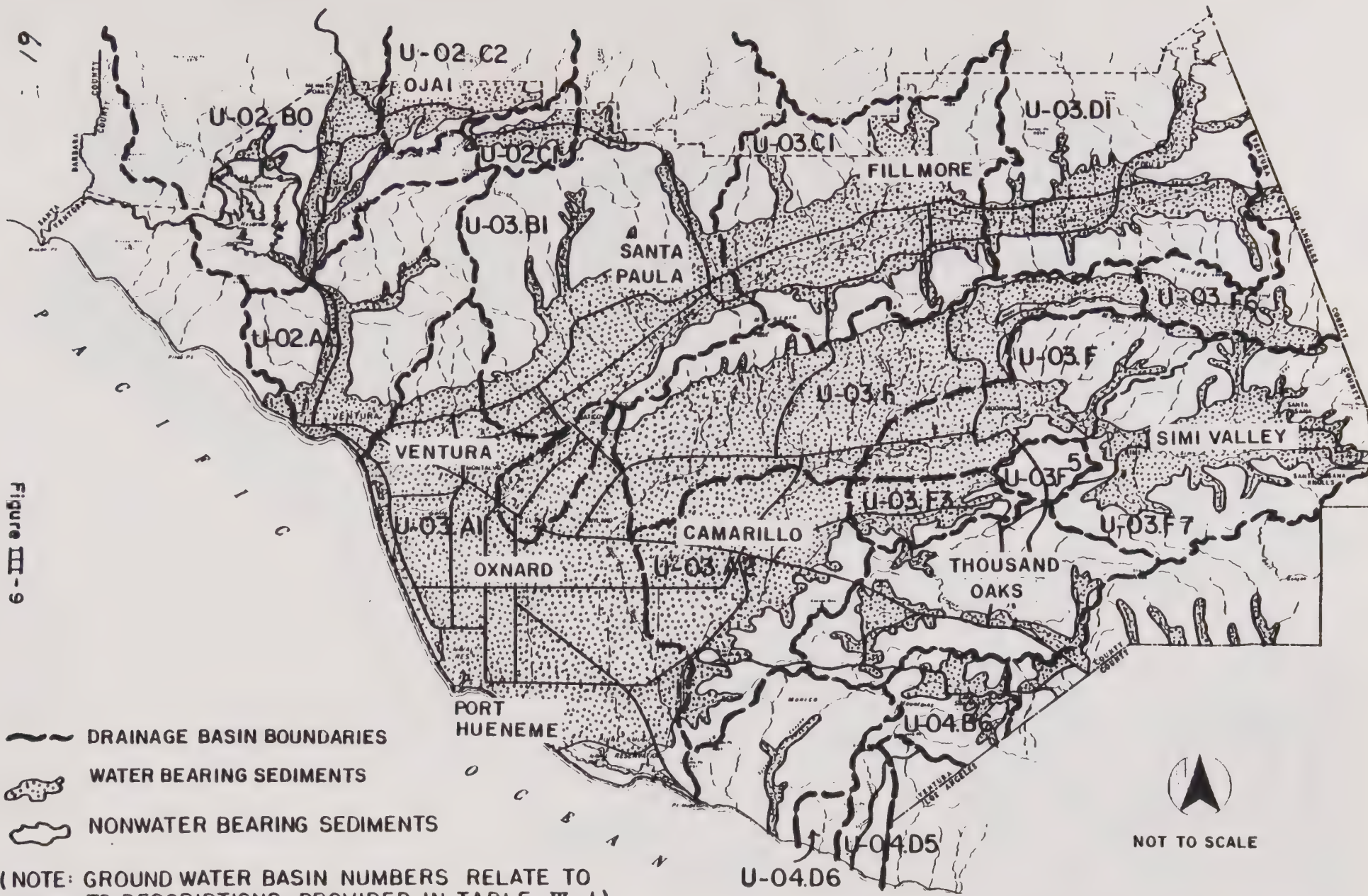
Twenty ground water basins have been identified in the South Half of Ventura County and are depicted in Figure III-9.

Brief summaries of these basins, including ground water storage, aquifer condition, areas of high water level and water quality are shown in Table III-1. Ground water is the major water supply for Ventura County and it provides about 70 percent of the total water demand.

About 85 percent of the ground water supply is used for agricultural irrigation. Major ground water basins which also correspond with principal agricultural lands include Piru, Fillmore, Santa Paula, Ojai, Oxnard Plain, Pleasant Valley and Las Posas. In the latter three basins, ground water is overdrafted by about 70,000 acre feet a year (AF/yr.). The most serious problem resulting from overdraft to date is seawater intrusion of the Oxnard aquifer zone which at present will cost more than \$25 million to resolve.

The quality of ground water varies from basin to basin and the TDS range from less than 500 mg/l in the North Las Posas basin to more than 3,000 mg/l in the Lower Ventura River basin, with the average TDS at about 1,000 mg/l. Ground water is mostly of calcium sulfate character and is generally of suitable quality for irrigation use, but marginal for municipal and industrial uses because of high TDS and hardness.

Because ground water constitutes such a large portion of the total water supply, and adequate quantities of replacement water are not available, it constitutes a valuable resource which must be protected. Consideration must therefore be given to locating landfill sites either in areas where ground water does not underly the site or in areas having poor ground water quality (>3,000 TDS mg./l).



MAJOR GROUNDWATER BASINS

SOURCE: VENTURA COUNTY FLOOD CONTROL DISTRICT 1983

COUNTYWIDE SOLID WASTE MANAGEMENT PROGRAM

TABLE III-1 GROUND WATER BASINS IN THE SOUTH HALF OF VENTURA COUNTY

	*Basin Numbers	Ground Water Storage in 1967 (x 1,000 AF)	Aquifer Condition	Areas of High Water Level	Water Quality 1978-1980 (TDS in mg/l)
<u>Ground Water Basins & Santa Clara Hydrologic Unit</u>					
Piru	U-03.D1	1,900	Unconfined	River channel below Piru Cr. confluence	1,000-3,000
Fillmore	U-03.C1	7,100	Unconfined	Santa Clara River Channel	500-2,000
Santa Paula	U-03.B1	4,700	Unconfined	Santa Clara River Channel	1,000-2,000
Mound	U-03.A1	1,400	Confined	None	900-2,000
Oxnard Plain Forebay	U-03.A1	1,200	Unconfined	Moderately high	900-1,500
Oxnard Plain Pressure	U-03.A1	5,500	Major Aquifers confined	Whole basin, Semiperched zone	500-2,000
Pleasant Valley	U-03.A2	1,300	Major Aquifers confined	South of Freeway, semiperched zone	500-2,000
<u>Calleguas-Conejo Hydrologic Unit</u>					
Gillibrand	U-03.F6	N.A.	Unconfined	N.A.	700
Simi Valley	U-03.F7	180	Mostly unconfined	Western and eastern portions	1,000-2,000
North Las Posas	U-03.F	2,000	Mostly confined	None	250-1,000
South Las Posas	U-03.F		Mostly unconfined	Along Arroyo Simi	500-1,500
Tierra Rejada	U-03.F5	N.A.	Unconfined	N.A.	1,000
Santa Rosa	U-03.F3	90	Unconfined	Along Conejo Creek	750-1,000
<u>Ventura River Hydrologic Unit</u>					
Ojai	U-02.C2	64	Unconfined	Western Half	750-1,000
Upper Ojai	U-02.C1	4	Unconfined	Along Lion Creek	500
Upper Ventura River	U-02.B0	20	Unconfined	River Channel	500-750
Lower Ventura River	U-02.A0	N.A.	Unconfined	River Channel	3,000
<u>Malibu Hydrologic Unit</u>					
Sherwood	U-04.B6	N.A.	Unconfined	Valley Floor	750
Little Sycamore	U-04.D5	N.A.	Fracture Zone	None	250-1,000
Deer Canyon	U-04.D6	N.A.	Fracture Zone	None	250-1,000

* Basin Numbers - The State Department of Water Resources designated a numerical index to hydrologic units, subunits and subareas where ground water basins occur. U represents the Los Angeles Drainage Province including Ventura County.

NOTE: N.A. = Means that the appropriate information is not available.

3.8 GEOHYDROLOGY

A. General Water Quality

Geologic formations have been classified by waterbearing and waterquality characteristics into the following five groups (Figures III-7 and III-8). Group 1 is least desirable while Group 5 is most desirable. Detailed characteristics of each formation should be evaluated in greater detail prior to final site election.

Group 1. Fresh waterbearing alluvium unconfined. TDS of fresh water is less than 3,000 mg/l.

Group 2. Fresh waterbearing alluvium confined or semi-confined.

Group 3. Fresh waterbearing fractured or porous bedrock.

Group 4. Alluvial areas containing ground water of poor quality. TDS of water generally ranges from 3,000 to 10,000 mg/l.

Group 5. Nonwaterbearing rock or those containing saline water. TDS of water is generally greater than 10,000 mg/l.

B. Classification of Major River Drainage Areas in Ventura County

There are three major river drainages in Ventura County. They are the Rincon Creek and Ventura River drainages, Santa Clara River drainage, and the Calleguas and Malibu Creek drainages. Each drainage contains different geologic classifications and water quality characteristics as follows:

1. Rincon Creek and Ventura River Drainage

- o Group 1: Fresh waterbearing, unconfined, alluvial sediments occur in the Upper Ventura River, Ojai and Upper Ojai Valley, and Santa Ana Creek areas. Ground water is an important source of water for most beneficial uses and TDS is generally less than 750 mg/l. The maximum thickness of waterbearing alluvium approaches 700 feet in the Ojai basin. It reaches a maximum thickness of about 200 feet in the Upper Ventura River basin, and is about 55 feet thick in the Upper Ojai basin. Coastal and river terrace deposits are permeable, but generally elevated above the water table.
- o Group 2: Fresh waterbearing, confined or semi-confined alluvial sediments do not occur in these drainages.
- o Group 3: Fresh waterbearing fractured or porous bedrock includes the Oligocene Sespe formation which yields locally fresh water to wells within the Santa Ana Creek watershed and the Upper Ojai Valley. The Miocene Monterey formation along the Sulphur Mountain ridge area also yields small quantities of fresh water to domestic wells.

- o Group 4: Alluvial areas containing poor quality ground water. Data indicates that the quality of ground water in the Lower Ventura River basin and Canada Larga Creek is poor, with the TDS generally greater than 3,000 mg/l. Groundwater is not used for beneficial purposes. Within the Rincon Creek drainage area, ground water quality in small creeks such as Padre Juan, Javon, or Madranio Canyons is of poor quality with TDS generally ranging from 5,000 to 11,000 mg/l. This water is not beneficially used.
- o Group 5: Nonwaterbearing rock or those containing saline water. Eocene marine formations north of Ojai are generally nonwaterbearing except for some fresh water springs which flow within the Las Padres National Forest. Most of the Miocene and Pliocene marine formations in the Sulphur and Red Mountain areas are nonwaterbearing, except those that produce oil and saline water. The only fresh water wells producing from these formations are the small capacity domestic wells in the Sulphur Mountain ridge area.

2. Santa Clara River Drainage

- o Group 1: Fresh waterbearing, unconfined sediments occur in most of the Santa Clara River Valley, including the Piru, Fillmore, Santa Paula, Oxnard Plain Forebay ground water basins, many tributaries, and the San Pedro formation outcrop areas along the north slopes of the valley. These sediments are highly permeable. Ground water is the main source of water supply in this drainage area, along with lesser quantities of imported water. TDS generally ranges from less than 500 to 2,000 mg/l.
- o Group 2: Fresh waterbearing, confined or semi-confined alluvial sediments occur in the Oxnard Plain Pressure, Pleasant Valley and Mound basins, where major aquifer zones are overlain by low permeability clay caps, generally more than 100 feet thick. Ground water is the major source of water supply in these basins and TDS ranges from less than 500 to 2,000 mg/l.
- o Group 3: Fresh waterbearing, fractured or porous bedrock. In this area there are no records of fresh water wells in Tertiary bedrock, including the Sespe formation.
- o Group 4: Alluvial areas containing ground water of poor quality. These areas include most of the small tributaries, that drain to the Santa Clara River from Tertiary oil-bearing bedrock at South Mountain-Oak Ridge on the south, and Ventura Foothills-Santa Paula Ridge-Hopper Mountain areas on the north. The quality of surface water is generally poor with TDS ranging from slightly less than 2,000 mg/l to more than 10,000 mg/l. Within Wheeler Canyon some domestic wells yield small quantities of poor quality ground water, generally highly mineralized to 3,500 mg/l of TDS.
- o Group 5: Nonwaterbearing rock, or those containing saline water. Mountains and hills within the drainage area consist of Tertiary marine, nonwaterbearing, but oilbearing formations. No fresh water wells are known to exist in these formations. Surface water quality in small tributaries indicates that the quality of spring water fed by Tertiary formations to creeks is poor or saline.

3. Calleguas and Malibu Creek Drainages

- o Group 1: Fresh waterbearing, unconfined sediments. Most of the unconfined alluvial sediments are located in Simi Valley and other minor basins. Surface exposures of Fox Canyon and Grimes Canyon aquifer zones and Epworth gravels in the South Mountain and Happy Camp Canyon areas are also important, although the waterbearing capacity of those sediments varies greatly depending on location. There is a minor unconfined or semiconfined aquifer in the north and south Las Posas Basins.
- o Group 2: Fresh waterbearing, confined alluvial sediments. In the north and south Las Posas Basins, the Fox Canyon and Grimes Canyon aquifer zones are the major source of fresh water supply. These zones are overlain by the less permeable San Pedro formation, undifferentiated terrace and alluvial deposits which generally confine these zones. In the western part of Simi Valley, the aquifers are locally confined by clay layers.
- o Group 3: Fresh waterbearing fractured or porous bedrock. Upper Cretaceous rocks (sandstone and conglomerate) are generally nonwaterbearing, but locally yield variable quantities of fresh water to domestic and limited irrigation wells in the Simi Hills and the hills east of Simi Valley. Paleocene-Eocene formations are generally nonwaterbearing, but domestic and limited irrigation supplies are obtained from poorly cemented sandstones of the Upper Lajas and the Santa Susana-Martinez formations in the hills south and east of Simi Valley. The Oligocene Sespe formation is essentially nonwaterbearing, but sandstones and conglomerates in Simi Valley sometimes yield 10 to 100 gpm to wells. In the Santa Monica Mountain-Conejo Valley areas, many domestic and limited irrigation wells, which yield variable quantities of fresh water, have been drilled in the Conejo volcanic rocks, Topanga and Modelo formations.
- o Group 4: Alluvial areas containing ground water of poor quality. Of the many naturally flowing creeks of the area, only the low flows of Tapo Canyon show poor quality with TDS at about 5,000 mg/l.
- o Group 5: Nonwaterbearing rock or those containing saline water. Tertiary marine formations within South Mountain-Oak Ridge area are generally nonwaterbearing and oilbearing.

3.9 SEISMOLOGY AND LIQUEFACTION

Figures III-10 and III-11 show some of the most likely areas in the south half of Ventura County subject to fault rupture and liquefaction due to earthquakes.

These faults are fracture zones with displacement of one side of a fracture to another. Fault zones can be barriers, producing higher ground water, and can produce a network of fractures that would provide direct connection between waste and ground water. Further, if these zones are actively undergoing displacement, these previous concerns are complicated and the proposed site could be subject to liquefaction and slope stability.

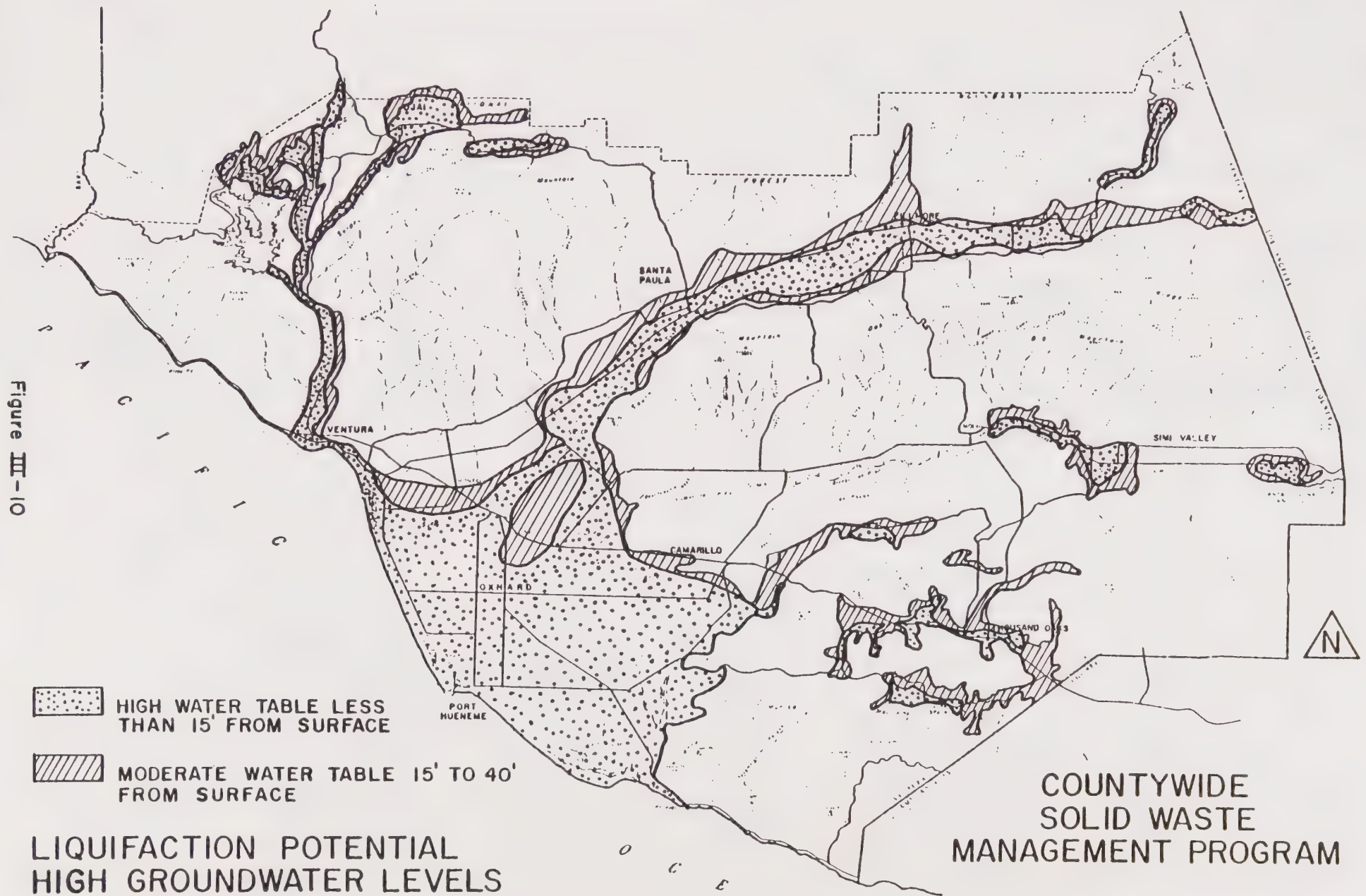


FIGURE III - II

geologic structures

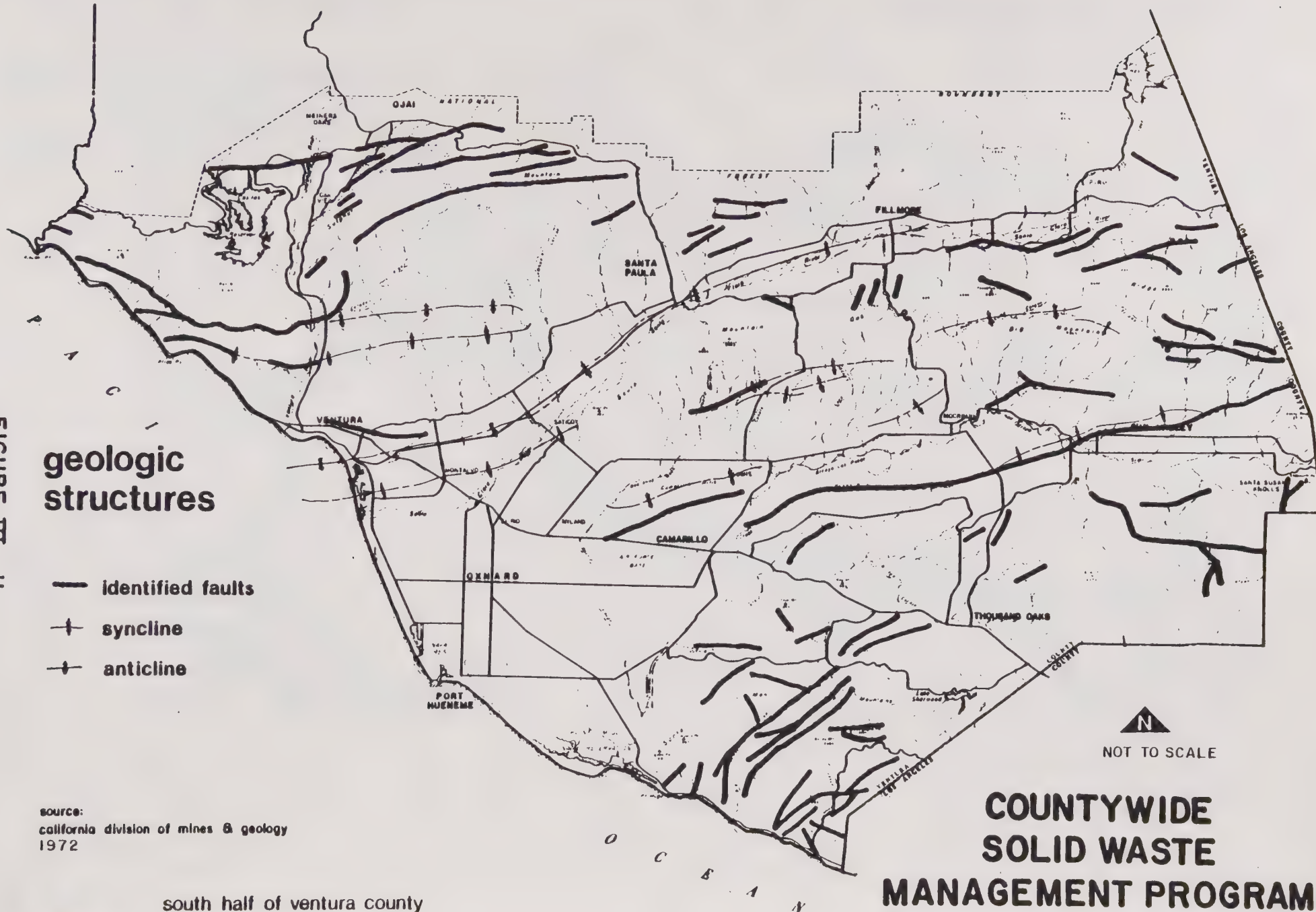
- identified faults
- + syncline
- + anticline

source:
california division of mines & geology
1972

south half of ventura county

ventura county planning division

1997



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In choosing a sanitary landfill site, fault zones must be taken into consideration. In most cases active fault zones should be avoided if possible. Other fault zones could be utilized only after a geologic examination of the site. In all cases, any proposed site should be examined by a Certified Engineering Geologist.

3.10 FINDINGS

A specific site's geologic and hydrologic characteristics can make a site suitable or unsuitable for waste disposal. Undesirable site characteristics are described below in order to provide general information to be used in evaluating potential disposal site locations.

A. Areas of High Precipitation

Large quantities of rain water can percolate into wastes through cover soils and produce large volumes of leachate. Higher rainfall areas (above 30 inches annually) are less favorable for disposal sites compared to lower rainfall areas (below 30 inches annually). Proper engineering design and operational practices can reduce deep percolation of rain water. Any locations in the southern half of Ventura County, where the long-term mean precipitation is 30 inches or more, are not as desirable for landfill siting because large amount of leachate which can be produced.

B. Flood Plains

Locating landfills in flood plains can cause serious surface and ground water pollution and is prohibited by the State Water Resources Control Board, unless adequate protection from inundation and permanent protection from washout is provided.

C. Inadequate Cover Materials

Landfills should be sited in areas where a sufficient quantity of low permeability (10^{-6} cm/sec. to 10^{-8} cm/sec.) natural cover material is readily available. If final cover materials are of high permeability or insufficient thickness, rainfall or water applied during subsequent use can percolate through waste materials and produce excessive quantities of polluting leachate or gas.

D. Unconfined Groundwater of Usable Quality

In major basins of Ventura County, ground water is stored in Quaternary alluvial and unconsolidated sediments. Some minor basins store ground water in fractured bedrock. Lateral and/or vertical hydraulic continuity exists in most sedimentary basins without adequate impervious layers of aquiclude. Hydraulic continuity also exists in fractured bedrock directly through fractures. Unconfined basins, where there are inadequate impervious strata to prevent vertical and lateral movement of liquids and gases into usable ground water, are not suitable for Class I or II landfill sites. Construction of permanent, artificial barriers with a permeability of less than 10^{-6} cm/sec. may not be adequate if there are high ground water levels. Unconfined basins of fresh ground water include: Piru, Fillmore, Santa Paula, Oxnard Plain Forebay, Gillibrand, Simi Valley, South Las Posas, Santa Rosa, Ojai, Upper Ojai, Upper Ventura

River and other small basins (Figure III-9). Therefore, the above basins should be of the lowest priority for selection as disposal sites (Class I and II). The semiperched aquifer zone of the Oxnard Plain Pressure and southern portion of the Pleasant Valley Basins probably contain an adequate quality of water which can be beneficially used and should be protected.

E. Areas of High Ground Water

If the water level rises above the base of Class I or Class II waste materials, leachate will be produced and ground water may become contaminated.

Most of the high ground water level areas (Figure III-10) are within unconfined ground water basins, where no adequate impervious barriers exist. Those areas may not be suitable for Class I and II waste disposal sites, but more detailed studies will be required during the final site selection process. Water levels less than 15 feet below ground surface are found near the Santa Clara River from west of Piru Creek to the confluence with the Pacific Ocean and within the entire Oxnard Plain Pressure Basin and the southern portion of the Pleasant Valley Basin. Other less extensive high water table areas are Piru Canyon, western portions of Ojai Valley, Upper Ojai Valley, Ventura River Valley, western and eastern portions of Simi Valley, Santa Rosa Valley along Conejo Creek and other minor basins in the Santa Monica Mountains.

In the Oxnard Plain and Pleasant Valley Basins the semiperched aquifer zone is unconfined and the water level is usually high, less than 15 feet. Vertical and lateral hydrological continuity through aquitards exist between semiperched aquifer and the underlying Oxnard aquifer zone. Ground water in the semiperched zone is currently not extensively used for beneficial purposes, but the water is probably fresh and should be protected from further degradation and migration to underlying ground water resources.

3.11 DEFINITIONS*

Aquifer Zones -

Areas or zones that are highly permeable and that supply large quantities of fresh water to many wells where saturated.

Confined Aquifer -

A body of ground water overlain by sufficiently impervious confining material which is moving in a conduit under pressure because of differences in hydraulic head between the intake and discharge area.

100-Year Flood Plain -

The 100-year flood plain for a particular channel is the area subject to flooding which has a probability of being equaled or exceeded once in 100 years.

Fractured Zone -

The occurrence of ground water in the joints, fractures, shears, and fault zones within rocks which would otherwise be non-waterbearing.

- Liquefaction - The transformation of loosely packed sediment into a fluid mass. This kind of failure predominantly occurs in cohesionless fine grained soils such as silts and fine sands during seismic activity.
- Potential Liquefaction Zones - Areas having high ground water levels which have the potential for liquefaction.
- Permeability - A measure of the ability of earth materials to transmit fluid, such as water, under a hydraulic gradient, customarily expressed in centimeters per second. Tighter soils are less permeable and reduce or prevent transmission of leachate and or gas migration.
- Unconfined Aquifer - An aquifer which is not immediately overlain by impervious material, and is moving under water table conditions.

*More specific definitions for some of these terms may be found at the end of Chapter XIV.

CHAPTER IV - WASTE GENERATION: CURRENT AND PROJECTED

4.1 INTRODUCTION

This chapter presents current and projected solid waste quantities generated by the County as a whole, and generated by well defined geographic areas (communities) as required by the California Administrative Code, Title 14, Section 17131.

In the past, refuse and other wastes were disposed of by simply dumping them on the nearest available piece of land, preferably (but not necessarily) out of sight and smell. When the dump became too voluminous or too offensive, it was reduced by open burning. Sanitary landfills, as we know them, (requiring a daily cover of soil) are a relatively recent development going back only to the early sixties in Ventura County.

As waste generation increased and materials generated became more varied, landfills began filling up at a faster rate and regulations progressively became more stringent. Public concern with the proper location of sites became more pronounced. Creation of a new sanitary landfill site is now a time consuming and costly investment. Advanced warning in the form of long term planning is essential.

The amount of waste likely to be generated in the future is a crucial element in any long-term planning for solid waste disposal. Estimation and projection of waste generation is somewhat complicated. To estimate the actual amount of solid waste generated it is necessary to determine 1) How much is landfilled locally, 2) How much is recycled, 3) How much is disposed out-of-County, 4) How much is disposed on-site, and 5) How much is "imported" from outside the County. Such estimates must be made not only for municipal refuse but also hazardous waste and special wastes (like oilfield waste). This chapter focuses on refuse.

Most refuse generated in Ventura County is disposed of at one of the three major landfills open to the general public. These are 1) Ventura Coastal-Bailard (Santa Clara site is now closed), 2) Simi Valley, and 3) Toland Road landfills. The fourth site which is open to the general public, Ozena is located so far from any major waste generation area that its waste loadings are relatively minor compared to the three sites mentioned. The Ozena facility landfills approximately 100 tons/month or 1,200 tons annually.

A significant minority of Ventura County's refuse is disposed of outside the County. Both the Calabasas and Chiquita Canyon Landfills in Los Angeles County receive some Ventura County waste. The exact amount fluctuates and is dependant upon many factors such as the distance from waste generation areas to disposal points, landfill disposal fees and decisions by independent haulers. Also, it can be noted there are no existing landfills in-County for most oilfield and hazardous wastes. These are primarily hauled to Casmalia in Santa Barbara County.

It is important to understand that these waste generation factors and projections are not absolutes. Waste generation will continue to vary geographically and seasonally throughout the next twenty years. Regional socio-economic characteristics, public response to resource recovery efforts, the rate of inflation, plus the increasing public awareness of solid waste problems and natural resource limitations can also affect waste generation rates within a given locale.

When used in conjunction with accurate complimentary data, such as population and imported/exported solid waste estimates, waste projections can be used to estimate the numbers and capacities of landfill facilities needed for adequate solid waste services, as well as the potential need for resource recovery. The development of waste projections are an integral part of the solid waste management planning necessary to preclude adverse public health, safety, and environmental impacts.

Waste projections presented in this chapter represent a planning yardstick for identifying the scope and magnitude of solid waste management needs, and for estimating the potential for resource recovery within Ventura County.

4.2 MEASUREMENT OF QUANTITIES

The wastes which are deposited in a given landfill serving a given population service area or wasteshed area, do not include waste that is recycled or waste that is exported to another landfill. Current waste loadings for the years 1979-1982 have been presented so as to portray this using the best data available. Estimates were derived from Ventura Regional Sanitation District's records, and by data acquired from out-of-County landfill sites.

The role of waste generation and its fluctuation during the life of the disposal site, is basically keyed to population and land use changes within the landfill's population service area or wasteshed area, as modified by changes in recycling habits and variation in imports and exports of waste. Unit waste quantities are given for each wasteshed area in terms of tons/year for both current and projected waste loadings for the years 1979-2005.

A. Units of Measurements

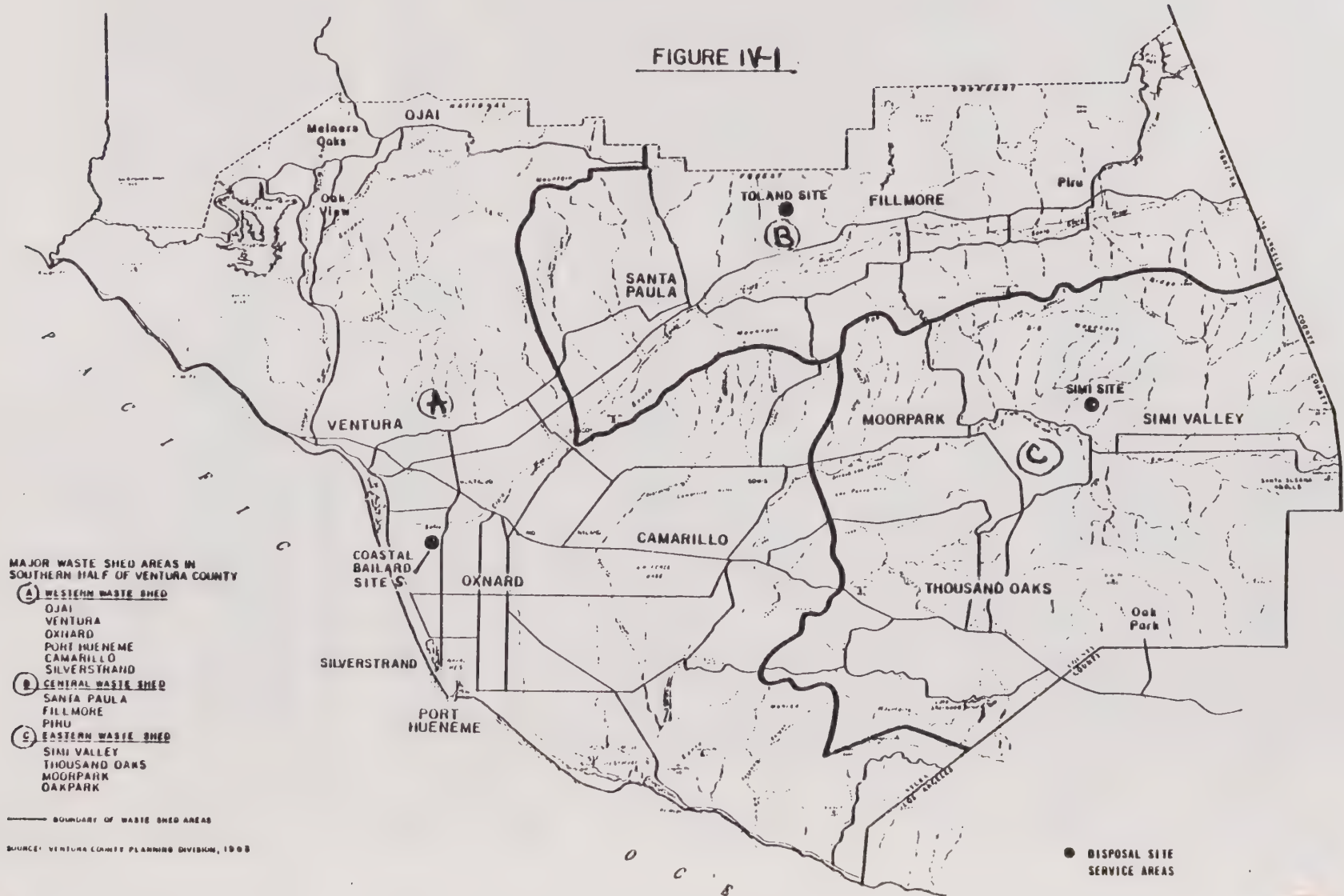
In this chapter, refuse quantities are expressed by weight in tons (2,000 lbs. = 1 ton). This represents the most accurate basis of measurement used in existing records as it can be directly measured rather than using volume, which must be estimated.

B. Calculation of Quantities

Landfilled Solid Waste (LSW): Ventura Regional Sanitation District (VRSD) provided the landfilled solid waste tonnage totals for each of the three major wasteshed areas. These totals also include the waste received from transfer stations in the County.

Exported Solid Waste (ESW): Each wasteshed area was assessed to determine if any waste generated in the area was exported outside the County for disposal. Estimates were made from the data provided by the affected out-of-county landfills.

FIGURE IV-1



Imported Solid Waste (ISW): The amount of waste generated outside the County and deposited in a specific landfill was also calculated, using VRSD data.

Recycled Solid Waste (RSW): The amount of waste which is recycled out of the waste stream before it enters the landfill was calculated at 10% for use in the high waste projections and 15% for use in the low waste projections. These estimates were arrived at through discussion among RMA Planning staff, VRSD's Resource Recovery Coordinator, and review committees using current information on the subject.

Total Waste Generated (TWG): This figure represents the total waste generated within a wasteshed area.

Population (P): Population estimates for 1979-1982 were gathered for each wasteshed area using the most current information available from the April 1980 U.S. Census, and the 1982 Air Quality Management Plan (Tables IV-1, 2). Population numbers are quite important as they are directly tied to the waste generation factors developed.

Wasteshed areas were originally determined in the 1976 plan, and although the areas have not basically changed, one refinement was necessary. Due to the recent increase in population and incorporation of the City of Moorpark, this area has been separated out, with all of its waste assumed to go to either the Simi Valley Landfill, or to Calabasas in Los Angeles County. The Camarillo area (which formerly contained Moorpark) is assumed to have all of its waste deposited at the Coastal/Bailard site (Figure IV-1).

Generation Factor (GF): This figure expresses the tons of waste generated per person annually within a particular wasteshed area. The GF is also expressed in pounds/person/day for comparison purposes.

Method: Combining the estimates of exported, imported, and recycled waste with the knowledge of how much solid waste was actually landfilled, a total tonnage of waste generated was determined for each landfill wasteshed area.

A waste generation factor was calculated by dividing the total waste generated by the population of the wasteshed area for each landfill. The waste generation factor shows the tons/person/year which is generated for that area. Combined with the assumptions about imports, exports and recycling, it is an essential factor in determining forecasts of wastes generated, and shows how rapidly a landfill site is likely to fill to capacity. Figure IV-2 shows the basic sequence of calculations used to determine the generation factor. Each waste generation table for both current and projected waste loadings displays the calculation sequence again for clarity. One variation of the basic calculation appears on the individual table for Coastal/Bailard projections (Table IV-7) as the waste-to-energy assumption is made in the projections.

TABLE IV-1

VENTURA COUNTY POPULATION BY WASTESHED, 1979-1982

<u>Wasteshed Area Landfills*</u>		<u>1979**</u>	<u>1980***</u>	<u>1981**</u>	<u>1982**</u>
1. <u>Western</u>					
Santa Clara River Landfills (Santa Clara/ Coastal/Bailard)	Ojai	24,684	25,067	25,271	25,754
	Ventura	80,212	84,191	84,992	86,862
	Oxnard	119,513	123,347	126,213	129,779
	Port Hueneme	17,786	18,507	18,774	19,331
	Camarillo	46,446	50,406	51,803	54,978
	Silver Strand	<u>2,692</u>	<u>2,692</u>	<u>2,690</u>	<u>2,743</u>
		291,333	304,210	309,743	319,447
2. <u>Eastern</u>					
(Simi Valley Landfill)	Simi Valley	79,378	81,392	82,222	84,692
	Thousand Oaks	88,939	94,055	97,929	101,084
	Moorpark	6,381	8,727	9,521	10,633
	Oak Park	<u>3,065</u>	<u>3,845</u>	<u>4,049</u>	<u>4,434</u>
		177,763	188,019	193,721	200,843
3. <u>Central</u>					
(Toland Road Landfill)	Santa Paula	23,486	23,847	24,086	24,507
	Fillmore	11,581	11,786	11,907	12,310
	Piru	<u>1,564</u>	<u>1,564</u>	<u>1,566</u>	<u>1,586</u>
		36,631	37,197	37,559	38,403
4. <u>Northern</u>					
(Ozena Landfill)	North Half	<u>475</u>	<u>487</u>	<u>487</u>	<u>509</u>
TOTALS		506,202	529,913	541,510	559,202

* Includes both growth and associated non-growth
 ** area population
 Estimate
 *** April 1980 U.S. Census

SOURCE: Ventura County Planning Division data, 1982

FIGURE IV-2

CALCULATIONS

$$LSW = TWG - RSW + ISW - ESW$$

$$TWG = LSW + ESW - ISW + RSW, \text{ also } TWG = GF \times P$$

TWG = Total Waste Generated

LSW = Landfilled Solid Waste

ESW = Exported Solid Waste

ISW = Imported Solid Waste

RSW = Recycled Solid Waste

GF = Generation Factor

P = Population

SOURCE: Ventura County Planning Division, 1982

4.3 CURRENT WASTE LOADINGS AND ASSUMPTIONS, 1979-1982

Waste loadings have been developed for Toland Road, Simi Valley, and Santa Clara/Ventura Coastal landfills. Each landfill encompasses a distinct geographic area called wasteshed areas. There are four wasteshed areas in Ventura County. A specific landfill provides each wasteshed area with a disposal facility.

The south half of the County, which contains over 99% of the County's population, is divided into three wasteshed areas. The western wasteshed area is currently serviced by the Coastal/Bailard landfill, and includes the communities of Ojai, Ventura, Oxnard, Port Hueneme, Camarillo, and Silverstrand. The eastern wasteshed area contains the Simi Valley Landfill, and includes the communities of Simi Valley, Thousand Oaks, Moorpark, and Oak Park. The central wasteshed area contains the Toland Road Landfill and includes the communities of Santa Paula, Fillmore, and Piru.

The north half of the County contains a very small percentage of the County's population (less than 1%), and is referred to as the northern wasteshed area. The northern wasteshed area serves the north half of the County's disposal needs at the Ozena Landfill. Waste generation tables are not included for this area since generation of refuse is determined to be insignificant because so little waste is generated in this area. The communities being served according to wasteshed area and landfill, are noted in Figure IV-3. Assumptions for each wasteshed are provided in each of the current waste loading tables IV-3, IV-4, and IV-5.

FIGURE IV-3

LANDFILL WASTESHED AREAS

<u>Wasteshed Area</u>	<u>Landfill</u>	<u>Serving These Communities</u> ¹
#1 Western	Coastal/Bailard ²	Ojai, Ventura, Oxnard, Port Hueneme, Camarillo, Silver Strand
#2 Eastern	Simi Valley	Simi Valley, Thousand Oaks, Moorpark, Oak Park
#3 Central	Toland Road	Santa Paula, Fillmore, Piru
#4 Northern	Ozena	North Half of County

¹Includes both growth area and associated non-growth area population

²Known as the Santa Clara/Ventura Coastal Landfill for the current waste loading tables, Coastal/Bailard for the projected waste loadings due to the closure of Santa Clara Landfill in 1982.

SOURCE: Ventura County Planning Division, May 1982

TABLE IV-2

VENTURA COUNTY
POPULATION FORECASTS BY WASTESHED, 1985-2005

Wasteshed Area Landfills*	<u>1985</u>	<u>1990</u>	<u>1995</u>	<u>2000</u>	<u>2005</u>
1. <u>Western</u>					
(Coastal/Bailard Landfill)					
Ojai	27,202	26,207	27,047	27,635	
Ventura	92,470	95,130	103,355	113,580	
Oxnard	140,476	151,948	162,348	186,698	
P. Hueneme	21,000	24,000	25,400	26,900	
Camarillo	64,500	75,603	83,221	88,980	
Silver Strand	<u>2,900</u>	<u>2,542</u>	<u>2,542</u>	<u>2,542</u>	
	348,548	375,430	403,913	446,335	494,847
2. <u>Eastern</u>					
(Simi Valley Landfill)					
Simi	92,100	104,016	113,173	123,330	
T. Oaks	110,550	119,233	133,677	149,620	
Moorpark	13,970	25,560	27,830	30,110	
Oak Park	<u>5,590</u>	<u>11,495</u>	<u>14,551</u>	<u>17,250</u>	
	222,210	260,304	289,231	320,310	341,894
3. <u>Central</u>					
(Toland Road Landfill)					
Santa Paula	25,768	26,036	26,928	27,710	
Fillmore	13,520	13,319	14,260	15,200	
Piru	<u>1,645</u>	<u>1,067</u>	<u>1,084</u>	<u>1,100</u>	
	40,933	40,422	42,272	44,010	53,359
4. <u>Northern</u>					
(Ozena Landfill)					
North Half	<u>575</u>	<u>550</u>	<u>600</u>	<u>650</u>	<u>713</u>
COUNTY TOTALS	612,266	676,706	736,016	811,305	890,813

*Includes both growth and associated non-growth area population

SOURCE: 1985-2000, Ventura County, Air Quality Management Plan, 3/2/82
2005, Ventura County Planning Division Estimates 5/83

TABLE IV-3

CURRENT WESTERN WASTESHED AREA (SANTA CLARA LANDFILL)
WASTE LOADINGS (TONS) 1979-1982¹
 (Group 2, 3 Wastes)

	1979	1980	1981	1982 ²
Landfilled Solid Waste (LSW)	452,908	423,341	416,378	384,237
Exported Solid Waste (ESW) ³	-0-	-0-	-0-	-0-
Imported Solid Waste (ISW) ⁴	14,946	13,970	13,799	12,679
Recycled Solid Waste (RSW)	48,662	45,485	44,731	41,284
Total Waste Generated (TWG)	486,624	454,856	447,310	412,892
Population (P)	291,333	304,210	309,743	319,447
Generation Factor (GF)				
Tons/person/year	1.67	1.49	1.44	1.29
[Pounds/person/day]	[9.15]	[8.16]	[7.89]	[7.07]

Assumptions:

1. It is assumed the western wasteshed area generates and landfills solid waste in the same area, or outside the County; it is assumed no net waste reaches another wasteshed area.
2. 1982 data is based on VRSD records for 1st quarter of 1982 and increased proportionately.
3. Santa Clara Landfill receives waste from Los Angeles and Santa Barbara Counties. About 13,799 tons (3.3%) was imported in 1981, this percentage was assumed for 1979, 1980 and 1982.
4. It is assumed that approximately 10% of the Total Waste Generated (TWG), is recycled.

SOURCE: VRSD, data, 1982

TABLE IV-4

CURRENT EASTERN WASTESHED AREA (SIMI VALLEY LANDFILL)
WASTE LOADINGS (TONS) 1979-1982¹
 (Group 2, 3 Wastes)

	1979	1980	1981	1982 ²
Landfilled Solid Waste (LSW)	209,760	174,668	110,524	159,202
Exported Solid Waste (ESW)				
Fixed ³	54,000 ^A	4,000 ^A	50,400 ^B	57,600 ^C
Variable	(0)	(0)	(45,000) ^D	(21,600) ^E
Imported Solid Waste (ISW) ⁴	16,780	13,973	8,971	12,736
Recycled Solid Waste (RSW) ⁵	27,442	23,855	21,883	25,074
Total Waste Generated (TWG)	274,422	238,550	218,836	250,740
Population (P)	177,763	188,019	193,721	200,843
Generation Factor (GF)				
Tons/person/year	1.54	1.26	1.13	1.25
[Pounds/person/day]	[8.44]	[6.90]	[6.19]	[6.85]

Assumptions:

1. It is assumed the eastern watershed area generates and landfills solid waste in the same area or outside the County; it is assumed no net waste reaches another watershed area in the County.
2. 1982 data is based on records for the first quarter of '82 and increased proportionately.
3. Eastern watershed area landfills some waste in Calabasas landfill in Los Angeles County.

- Fixed Exports
- A Based on 1981-82 data, monthly rate assumed at 4,500 tons/mo.
 - B Based on Calabasas data for Jan.-April, 1981, fixed exports assumed at 4,200 tons/mo.
 - C Based on Calabasas data for Jan.-March, 1982 "fixed" exports averaged 4,800 tons/mo.
 - D One county hauler changed hauling destinations in April, 1981 and disposed of all waste collected at Calabasas. April disposal to Calabasas was 5,242 tons (Calabasas data). A figure of 5,000 tons/mo. is assumed for remainder of year.
- Variable Exports
- E Based on Calabasas data for first quarter of '82, average exported is 1,800 tons/mo.

4. Based on VRSD data, Simi landfill received 8,971 tons solid waste from Los Angeles County in 1981. This is 8% of the landfilled wastes for 1981; this percentage is assumed for 1979, 1980 and 1982.

5. It is assumed that approximately 10% of the Total Waste Generated (TWG) is recycled.

SOURCE: VRSD data, 1982

TABLE IV-5

CURRENT CENTRAL WASTESHED AREA (TOLAND ROAD LANDFILL)
WASTE LOADINGS (TONS) 1979-1982¹
(Group 2, 3 Wastes)

	1979	1980	1981	1982 ²
Landfilled Solid Waste (LSW)	21,282	19,418	16,983	17,650
Exported Solid Waste (ESW) ³	2,142	1,759	1,708	1,776
Imported Solid Waste (ISW) ⁴	2,000	1,825	1,608	1,659
Recycled Solid Waste (RSW) ⁵	2,380	2,150	1,898	1,974
Total Waste Generated (TWG)	23,804	21,502	18,981	19,741
Population (P)	36,631	37,197	37,559	38,403
Generation Factor (GF)				
Tons/person/year	.65	.58	.51	.51
[Pounds/person/day]	[3.56]	[3.18]	[2.79]	[2.79]

Assumptions:

1. It is assumed the central wasteshed area generates and landfills solid waste in the same area or outside the County; it is assumed no net waste reaches another wasteshed area in the County.
2. 1982 data is based on VRSD records for 1st quarter '82 and increased proportionately.
3. Central wasteshed area exports some solid waste to Chiquita Canyon in Los Angeles County. Approximately 10% of landfilled wastes (minus imported) are taken to the Chiquita Landfill, based on Chiquita Landfill staff estimates of tonnage received from Ventura County.
4. Central wasteshed area receives some waste from Los Angeles County. According to VRSD records, 9.4% of Toland Road landfilled waste was imported in 1981. This percentage was assumed for '79, '80 & '82.
5. It is estimated that 10% of the Total Waste Generated (TWG) is recycled.

SOURCE: VRSD data, 1982

4.4 PROJECTED WASTE LOADINGS, AND ASSUMPTIONS, 1985-2005

In order to determine the amount of wastes likely to be disposed of in Ventura County during the next twenty years, projections have been made for the three landfills in the three major wasteshed areas: 1) Western Wasteshed Area, Coastal/Bailard Landfill, 2) Eastern Wasteshed, Simi Valley Landfill, and 3) Central Wasteshed Area, Toland Road Landfill.

Waste Loading projections cover years 1985 to 2005, and serve the purpose of establishing which landfill(s) will reach fill capacities first and generally when this is likely to occur. Given the circumstances outlined in the assumptions which are geared from current waste loading data and trends, high, medium and low projections are given for each of the three major landfills. Generally, high projections represent the "worst case" and a speedy filling up the landfills. Low projections represent the "best case" or optimistically slow filling of the landfills. Medium projections represent an average of the high and low, and probably the most realistic of the projections. Specific assumptions germane to each landfill are explained in detail prior to each projection waste loading table, however, certain assumptions remain the same for all three landfills and are shown in Table IV-6.

TABLE IV-6

BASIC ASSUMPTIONS FOR PROJECTIONS

	High Projection	Medium Projection	Low Projection
Exported Solid Waste (ESW)	Same as current tonnage	Average of high and low projections	Same as current percentage
Imported Solid Waste (ISW)	Same as current percentage	Average of high and low projections	Same as current tonnage
Recycled Solid Waste (RSW)	Sames as current percentage (10% of TWG)	Average of high and low projections	15% of TWG
Generation Factor (GF)	1.5% increase annually	Average of high and low projections	Same as current factor

SOURCE: Ventura County Planning Division, 1982

A. WESTERN WASTESHED (COASTAL-BAILARD LANDFILL) ASSUMPTIONS FOR PROJECTIONS (1985-2005)

High Projections

High projections represent the 'worst case' scenario, or the largest possible quantity of municipal wastes requiring landfill disposal. In determining the tonnage of wastes projected for disposal at a landfill in this wasteshed (presently the Coastal-Bailard site), several assumptions are made for the purpose of reflecting a high tonnage requiring landfill

disposal. The assumptions are explained below and projections for this wasteshed area are provided in Table IV-7.

- o Landfilled Solid Waste (LSW) - This tonnage figure indicates how much solid waste is projected to be disposed of at the landfill, based on the assumptions given. $LSW = TWG - RSW + ISW - ESW - WTE$
- o Waste-to Energy (WTE) - A major assumption for the high tonnage projections assumes that a waste-to-energy plant proposed for this wasteshed area will not be operating, thus, a zero figure is shown here. Waste otherwise diverted to this plant will be disposed of at the landfill site, causing it to fill to capacity at a much faster rate as shown in these high projection figures.
- o Exported Solid Waste (ESW) - It is assumed no net waste generated in this wasteshed area is exported or disposed of outside the County.
- o Imported Solid Waste (ISW) - It is assumed the landfill site will receive approximately 3.3% of its waste from the neighboring Santa Barbara and Los Angeles counties.
- o Recycled Solid Waste (RSW) - It is assumed that a constant 10% of the Total Waste Generated will be recycled throughout the twenty year projection period.
- o Total Waste Generated (TWG) - This figure represents the total amount of solid waste generated in the western wasteshed area. $TWG = LSW + WTE + ESW - ISW + RSW$, also $TWG = GF \times P$.
- o Population (P) - It is assumed the population will increase according to projections made in the 1982 Air Quality Management Plan (AQMP) and provided in Table IV-2.
- o Generation Factor (GF) - This figure expresses the tons of waste generated per person annually within this wasteshed area. For the high projections, it is assumed the GF will increase 1.5% each year during twenty years projected; $GF = TWG \div P$. The GF is also expressed in pounds/person/day and is shown on Table IV-7 in brackets. $Pounds/person/day = GF \times 2000 \div 365$.

Medium Projections

Medium projections represent the most probable and realistic projections for the amount of waste requiring disposal in the western wasteshed area, considering the high and low assumptions made. In determining the medium projections for the tonnage of waste disposed to the Coastal-Bailard site, averages are assumed from high and low projected figures except population which, of course, remains constant. Medium projections for the western wasteshed area presently serviced by the Coastal/Bailard landfill, are shown on Table IV-7.

Low Projections

Low projections represent the most optimistic view regarding the amount of waste requiring disposal in the western wasteshed area. In determining the low tonnage projections requiring disposal in this wasteshed, several

TABLE IV-7

PROJECTED WESTERN WASTESHED AREA
WASTE LOADINGS (TONS) 1985-2005
 (Group 2, 3 Wastes)

*Western wasteshed is presently serviced by the Coastal/Bailard Landfill¹

<u>HIGH PROJECTIONS</u>	<u>1985</u>	<u>1990</u>	<u>1995</u>	<u>2000</u>	<u>2005</u>
Landfilled Solid Waste (LSW)	450,913	520,631	597,723	702,043	824,404
Waste-to-Energy (WTE)	0	0	0	0	0
Exported Solid Waste (ESW)	0	0	0	0	0
Imported Solid Waste (ISW)	14,880	17,180	19,724	23,167	27,205
Recycled Solid Waste (RSW)	48,448	55,939	64,222	75,430	88,577
Total Waste Generated (TWG)	484,481	559,390	642,221	754,306	885,776
Population (P)	348,548	375,430	403,913	446,335	494,847
Generation Factor (GF)					
Tons/person/year	1.39	1.49	1.59	1.69	1.79
[Pounds/person/day]	[7.61]	[8.16]	[8.71]	[9.26]	[9.80]

*Projected Closure of Coastal/Bailard Landfill 1992-93

MEDIUM PROJECTIONS

Landfilled Solid Waste (LSW)	353,686	403,969	458,857	535,356	624,370
Waste-to-Energy (WTE)	78,250	78,250	78,250	78,250	78,250

Exported Solid Waste (ESW)	0	0	0	0	0
Imported Solid Waste (ISW)	13,940	15,090	16,362	18,083	20,102
Recycled Solid Waste (RSW)	59,514	65,981	73,007	82,906	94,391
Total Waste Generated (TWG)	477,510	533,110	593,752	678,429	776,909
Population (P)	348,548	375,430	403,913	446,335	494,847
Generation Factor (GF)					
Tons/person/year	1.37	1.42	1.47	1.52	1.57
[Pounds/person/day]	[7.50]	[7.78]	[8.05]	[8.32]	[8.60]

*Projected closure of Coastal/Bailard Landfill 1995-96

LOW PROJECTIONS

Landfilled Solid Waste (LSW)	256,459	287,306	319,990	368,670	424,337
Waste-to-Energy (WTE)	156,500	156,500	156,500	156,500	156,500
Exported Solid Waste (ESW)	0	0	0	0	0
Imported Solid Waste (ISW)	13,000	13,000	13,000	13,000	13,000
Recycled Solid Waste (RSW)	70,580	76,024	81,792	90,382	100,206
Total Waste Generated (TWG)	470,539	506,830	545,282	602,552	668,043
Population (P)	348,548	375,430	403,913	446,335	494,847
Generation Factor (GF)					
Tons/person/year	1.35	1.35	1.35	1.35	1.35
[Pounds/person/day]	[7.39]	[7.39]	[7.39]	[7.39]	[7.39]

*Projected closure of Coastal/Bailard Landfill 1999-2000

- 1 Coastal/Bailard landfill was formerly called the Santa Clara/Ventura Coastal landfill.

SOURCE: Ventura County Planning Division data, 1982

assumptions are made and explained below. Projections for this wasteshed area are shown on Table IV-7.

- o Landfilled Solid Waste (LSW) - This figure expresses the least amount of solid waste projected to be disposed of in the western wasteshed during the next twenty years, based on the assumptions given. $LSW = TWG - RSW + ISW - ESW - WTE$.
- o Waste to Energy (WTE) - A major assumption for the low tonnage projections assumes that a proposed waste-to-energy plant will operate at capacity and divert 500 tons/day of municipal waste to the WTE plant, which would otherwise require disposal in a western wasteshed area landfill. Five hundred tons a day multiplied by three hundred and thirteen work days equals one hundred fifty-six thousand five hundred tons diverted from a landfill annually (500 tons/day x 313 work days/year = 156,500 tons/year). This figure remains the same throughout the projection period as the proposed plant capacity is assumed to not change.
- o Exported Solid Waste (ESW) - It is assumed no net waste generated in this wasteshed area is exported or disposed of outside the County.
- o Imported Solid Waste (ISW) - It is assumed approximate current tonnage of 13,000 tons/year will require disposal in the western wasteshed from neighboring Santa Barbara and Los Angeles Counties, and that this tonnage figure will remain constant throughout the twenty year projection period.
- o Recycled Solid Waste (RSW) - It is assumed that 15% of the Total Waste Generated is recycled. This percentage is assumed to remain constant throughout the twenty year projection period.
- o Total Waste Generated (TWG) - This figure expresses the total amount of solid waste generated in this wasteshed area. $TWG = LSW + WTE + ESW - ISW + RSW$ also $TWG = GF \times P$.
- o Population (P) - It is assumed the population will increase according to the projections made in the 1982 AQMP and shown on Table IV-2.
- o Generation Factor - This figure expresses the tons of waste generated per person annually within this wasteshed area. It is assumed the GF will remain constant throughout the twenty years of low projections. $GF = TWG \div P$. The GF is also expressed in pounds/person/day and is shown on Table IV-7 in brackets. $Pounds/person/day = GF \times 2000 \div 365$.

B. EASTERN WASTESHED (SIMI VALLEY LANDFILL) ASSUMPTIONS FOR PROJECTIONS
(1985-2005)

High Projections

High projections represent the 'worst case' scenario, or highest possible quantity of municipal wastes requiring landfill disposal, given the assumptions made below. In projecting the tonnage of wastes requiring disposal of a landfill in this wasteshed (presently the Simi landfill), several assumptions are made for the purpose of reflecting a high amount of waste requiring disposal. The assumptions are explained below and projections for this wasteshed area are provided in Table IV-8.

- o Landfill Solid Waste (LSW) - This figure expresses the highest amount of solid waste projected for disposal in the eastern wasteshed during the next twenty years, and based on the assumptions given.
 $LSW = TWG - RSW + ISW - ESW$
- o Exported Solid Waste (ESW) Fixed: It is assumed approximately the same amount of waste will continue to be exported and disposed of outside the County. Variable: It is assumed no waste is exported and disposed of outside the County.
- o Imported Solid Waste (ISW) - It is assumed the eastern wasteshed will continue to receive 8% of its waste requiring landfill disposal from Los Angeles County throughout the twenty-year projection period.
- o Recycled Solid Waste (RSW) - It is assumed approximately 10% of the Total Waste Generated (TWG) will be recycled. This percentage is assumed to remain constant throughout the twenty year projection period.
- o Total Waste Generated (TWG) - This figure expresses the total amount of solid waste generated in this wasteshed area. $TWG = LSW + ESW - ISW + RSW$, also, $TWG = GF \times P$
- o Population (P) - Population figures for this wasteshed area are interpolated from projections made in the 1982 Air Quality Management Plan and provided in Table IV-2.
- o Generation Factor (GF) - This figure expresses the tons of waste generated per person annually within this wasteshed area. It is assumed the GF will increase 1.5% each year throughout the twenty years of high projections. $GF = TWG \div P$ The GF is also expressed in pounds/person/day and is shown on Table IV-8 in brackets.
 $Pounds/person/day = GF \times 2000 \div 365$

Medium Projections

Considering the high and low projections made, medium projections represent the most realistic projections for the amount of waste expected to be required for disposal in the eastern wasteshed area. In determining the medium tonnage projections for this wasteshed area, averages are assumed from each of the high and low figures except 'population' which remains as projected by the 1982 Air Quality Management Plan. Medium projections are given in Table IV-8.

Low Projections

Low projections represent the most ideal view regarding the amount of waste requiring disposal in the eastern wasteshed area. In determining the low tonnage projections for this wasteshed area, several assumptions are made and explained below. Simi Valley low projections are shown in Table IV-8.

- o Landfilled Solid Waste (LSW) - This figure expresses the least amount of solid waste projected to be disposed of in the eastern wasteshed area during the next twenty years based on the assumptions given. $LSW = TWG - RSW + ISW - ESW$
- o Exported Solid Waste (ESW) - Fixed: It is assumed that approximately the same percentage of waste will continue to be exported and disposed outside the County. Variable: It is assumed that 5,000 tons/month will continue to be exported indefinitely.
- o Imported Solid Waste (ISW) - It is assumed that the eastern wasteshed area will continue to receive approximately the same amount of waste (1,000 tons/month) from Los Angeles County throughout the twenty years of projections.
- o Recycled Solid Waste (RSW) - It is assumed approximately 15% of the Total Waste Generated (TWG) will be recycled. This percentage is assumed to remain constant throughout the twenty years of projections.
- o Total Waste Generated (TWG) - This figure expresses the total amount of solid waste generated in the eastern wasteshed area using the low assumptions given. $TWG = LSW + ESW - ISW + RSW$, also, $TWG = GF \times P$
- o Population (P) - Population figures for this wasteshed area are obtained from the projections made in the 1982 Air Quality Management Plan shown on Table IV-2.
- o Generation Factor (GF) - This figure expresses the tons of waste generated per person annually within the eastern wasteshed area. It is assumed the GF will remain the same throughout the twenty years of low projections. $GF = TWG \div P$. The GF is also expressed in pounds/person/day and is shown on Table IV-8 in brackets. $Pounds/person/day = GF \times 2000 \div 365$

TABLE IV-8

PROJECTED EASTERN WASTESHED AREA
WASTE LOADINGS (TONS) 1985-2005
 (Group 2,3 Wastes)

*The eastern wasteshed is presently serviced by the Simi Valley Landfill.

<u>HIGH PROJECTIONS</u>	<u>1985</u>	<u>1990</u>	<u>1995</u>	<u>2000</u>	<u>2005</u>
Landfilled Solid Waste (LSW)	207,593	271,629	328,627	392,396	446,426
Exported Solid Waste (ESW) Fixed	57,000	57,000	57,000	57,000	57,000
(ESW) Variable	0	0	0	0	0
Imported Solid Waste (ISW)	16,607	21,730	26,290	31,391	35,714
Recycled Solid Waste (RSW)	27,554	34,099	39,926	46,444	51,967
Total Waste Generated (TWG)	275,540	340,998	399,263	464,449	519,679
Population (P)	222,210	260,304	289,231	320,310	341,894
Generation Factor (GF)					
Tons/person/year	1.24	1.31	1.38	1.45	1.52
[Pounds/person/day]	[6.79]	[7.18]	[7.56]	[7.94]	[8.33]

*Projected closure of Simi Valley Landfill 1991

MEDIUM PROJECTIONS

Landfilled Solid Waste (LSW)	164,540	209,769	248,299	290,962	325,462
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MEDIUM PROJECTIONS (Cont.)

Exported Solid Waste

(ESW) Fixed	57,084	63,301	68,023	73,094	76,617
(ESW) Variable	30,000	30,000	30,000	30,000	30,000

Imported Solid Waste

(ISW)	14,303	16,865	19,145	21,695	23,857
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Recycled Solid Waste

(RSW)	33,775	40,476	45,993	52,049	56,754
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Total Waste

Generated (TWG)	271,096	326,681	373,170	424,410	464,976
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Population (P)	222,210	260,304	289,231	320,310	341,894
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Generation Factor (GF)

Tons/person/year	1.22	1.255	1.29	1.325	1.36
[Pounds/person/day]	[6.68]	[6.87]	[7.06]	[7.26]	[7.45]

*Projected closure of Simi Valley Landfill 1992-93

LOW PROJECTIONS

Landfilled Solid Waste

(LSW)	121,486	147,908	167,971	189,528	204,498
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Exported Solid Waste

(ESW) Fixed	57,169	69,603	79,045	89,189	96,234
(ESW) Variable	60,000	60,000	60,000	60,000	60,000

Imported Solid Waste

(ISW)	12,000	12,000	12,000	12,000	12,000
-------	--------	--------	--------	--------	--------

Recycled Solid Waste

(RSW)	39,997	46,854	52,061	57,655	61,541
-------	--------	--------	--------	--------	--------

Total Waste

Generated (TWG)	266,652	312,365	347,077	384,372	410,273
-----------------	---------	---------	---------	---------	---------

Population (P)	222,210	260,304	289,231	320,310	341,894
Generation Factor (GF)					
Tons/person/year	1.20	1.20	1.20	1.20	1.20
[Pounds/person/day]	[6.57]	[6.57]	[6.57]	[6.57]	[6.57]

*Projected closure of Simi Valley Landfill 1995-96

Source: Ventura County Planning Division data 1982

C. CENTRAL WASTESHED (TOLAND ROAD LANDFILL) ASSUMPTIONS FOR PROJECTIONS
(1985-2005)

High Projections

High projections represent the 'worst case' scenario or highest possible quantity of municipal wastes requiring landfill disposal. In determining the tonnage of waste projected to require disposal in the central wasteshed (presently serviced by the Toland Road landfill), several assumptions are made. The assumptions are explained below and projections for this wasteshed area are shown on Table IV-9.

- o Landfilled Solid Waste (LSW) - This figure expresses the highest amount of solid waste projected for disposal in the central wasteshed area during the next twenty years, based on the assumptions given.
 $LSW = TWG - RSW + ISW - ESW$
- o Exported Solid Waste (ESW) - It is assumed approximately the same amount of waste will continue to be exported and disposed of outside the County during the twenty year projection period.
- o Imported Solid Waste (ISW) - It is assumed the central wasteshed area will continue to receive approximately 9.4% of its landfilled waste from Los Angeles County throughout the twenty year projection period.
- o Recycled Solid Waste (RSW) - It is assumed approximately 10% of the Total Waste Generated will be recycled during the twenty years of projections.
- o Total Waste Generate (TWG) - This figure expresses the total amount of solid waste generated in this wasteshed area. $TWG = LSW + ESW - ISW + RSW$, also $TWG = GF \times P$.
- o Population (P) - Population figures for this wasteshed area are interpolated from projections made in the 1982 Air Quality Management Plan and shown on Table IV-2.
- o Generation Factor (GF) - This factor expresses tons of waste generated per person annually within this wasteshed area. It is assumed the GF will increase 1.5% each year throughout the twenty years of high projections. $GF = TWG \div P$. The GF is also expressed in pounds/person/day and is shown on Table IV-9 in brackets.
 $Pounds/person/day = GF \times 2000 \div 365$.

Medium Projections

Considering the high and low assumptions made, medium projections represent the most probable projections for the amount of waste requiring disposal in the central wasteshed area. In determining the medium tonnage projected to require landfill disposal, averages are assumed from the high and low projections except population, which remains constant. Medium projections for the central wasteshed area are shown on Table IV-9.

Low Projections

Low projections represent the most optimistic view regarding the amount of waste requiring disposal in the central wasteshed area. In determining the low tonnage projections for this wasteshed area, several assumptions are made and explained below. Medium projections for the central wasteshed area are given in Table IV-9.

- o Landfilled Solid Waste (LSW) - This figure expresses the lowest amount of solid waste projected to require disposal in the central wasteshed area during the next twenty years, based on the assumptions given. $LSW = TWG - RSW + ISW - ESW$.
- o Exported Solid Waste (ESW) - It is assumed that 9.9% of the landfilled waste will continue to be received from Los Angeles County throughout the twenty year projection period.
- o Imported Solid Waste (ISW) - It is assumed the approximate current tonnage of 1,650 tons/year will require disposal in the central wasteshed from Los Angeles County and will remain constant throughout the twenty year projections.
- o Recycled Solid Waste (RSW) - It is assumed that 15% of the Total Waste Generated is recycled. This percentage is assumed to remain constant throughout the projection period.
- o Total Waste Generated (TWG) - This figure expresses the amount of waste generated in this wasteshed area. $TWG = LSW + ESW - ISW + RSW$, also, $TWG = GF \times P$.
- o Population (P) - Population figures for this wasteshed area are interpolated from projections made in the 1982 Air Quality Management Plan and shown on Table IV-2.
- o Generation Factor (GF) - This figure, which expresses the tons of waste generated by each person living in this wasteshed area annually, is assumed to remain the same throughout the twenty year projection period. $GF = TWG \div P$ The GF is also expressed in pounds/person/day and is shown on Table IV-9 in brackets. $Pounds/person/day = GF \times 2000 \div 365$.

TABLE IV-9

PROJECTED CENTRAL WASTESHED AREAWASTE LOADINGS (TONS) 1985-2005

(Group 2, 3 Wastes)

*The central wasteshed is presently serviced by the Toland Road Landfill.

<u>HIGH PROJECTIONS</u>	<u>1985</u>	<u>1990</u>	<u>1995</u>	<u>2000</u>	<u>2005</u>
Landfilled Solid Waste					
(LSW)	19,597	20,933	23,662	26,463	35,150
Exported Solid Waste					
(ESW)	1,770	1,770	1,770	1,770	1,770
Imported Solid Waste					
(ISW)	1,842	1,967	2,224	2,487	3,304
Recycled Solid Waste					
(RSW)	2,169	2,304	2,578	2,860	3,735
Total Waste Generated					
(TWG)	21,694	23,040	25,786	28,606	37,351
Population (P)	40,933	40,422	42,272	44,010	53,359
Generation Factor (GF)					
Tons/person/year	0.53	0.57	0.61	0.65	0.70
[Pounds/person/day]	[2.90]	[3.12]	[3.34]	[3.56]	[3.83]

*Projected closure of Toland Road Landfill. beyond 2005

MEDIUM PROJECTIONS

Landfilled Solid Waste					
(LSW)	18,609	19,177	20,903	22,642	28,809
Exported Solid Waste					
(ESW)	1,772	1,761	1,801	1,839	2,042

Imported Solid Waste					
(ISW)	1,746	1,808	1,937	2,068	2,477
Recycled Solid Waste					
(RSW)	2,650	2,698	2,905	3,113	3,908
Total Waste Generated					
(TWG)	21,285	21,828	23,672	25,526	32,282
Population (P)	40,933	40,422	42,272	44,010	53,359
Generation factor (GF)					
Tons/person/year	.52	.54	.56	.58	.60
[Pounds/person/day]	[2.85]	[2.96]	[3.07]	[3.18]	[3.29]

*Projected closure of Toland Road Landfill. beyond 2005

LOW PROJECTIONS

Landfilled Solid Waste					
(LSW)	17,621	17,421	18,143	18,821	22,468
Exported Solid Waste					
(ESW)	1,774	1,752	1,832	1,908	2,313
Imported Solid Waste					
(ISW)	1,650	1,650	1,650	1,650	1,650
Recycled Solid Waste					
(RSW)	3,131	3,092	3,233	3,366	4,082
Total Waste Generated					
(TWG)	20,876	20,615	21,558	22,445	27,213
Population (P)	40,933	40,422	42,272	44,010	53,359
Generation Factor (GF)					
Tons/person/year	0.51	0.51	0.51	0.51	0.51
[Pounds/person/day]	[2.79]	[2.79]	[2.79]	[2.79]	[2.79]

*Projected closure of Toland Road Landfill. beyond 2005

SOURCE: Ventura County Planning Division data, 1982

4.5 CUMULATIVE WASTE LOADINGS AND REMAINING LANDFILL CAPACITIES

A. Cumulative Waste Loadings

Cumulative waste loadings are provided for each of the three major wasteshed areas to the year 2005. It is important to note that although a specific landfill is the present disposal facility in each wasteshed area, waste will continue to be generated after a site has reached capacity. Therefore, locating new disposal facilities is inevitable. These tables are useful for comparisons between waste projections (Tables IV-7 to IV-9) and the remaining capacity tables (IV-13 to IV-15).

Cumulative waste loadings have been calculated using the projected tonnage figures mentioned earlier in this chapter. Cumulative tonnage figures are calculated by averaging the amount of waste landfilled solid waste (LSW) over a five year period using the waste projection tables for the high, medium, and low projections, and then added to the next five year figure to obtain a cumulative figure. Cumulative waste loadings for each of the three major wasteshed areas are shown on Tables IV-10, 11, and 12.

B. Remaining Landfill Capacities

Waste projections are used to determine the remaining capacity available at the three major landfills in Ventura County. To determine the remaining capacity of landfills in the County's three wasteshed areas, capacity figures measured in cubic yards were obtained from the Ventura Regional County Sanitation District (VRSD), which operates Coastal/Bailard and Toland Road landfills, and Waste Management, Inc., the operator of the Simi Valley Landfill. Below, the remaining tonnage capacity of each of the three landfills is ascertained. Comparing the capacity figure with the projected cumulative tonnages indicates when capacity will be reached depending on whether high, medium or low projections are utilized.

It is important to note that greater compaction densities are achieved at the Simi Valley landfill than the Toland Road and Coastal/Bailard landfills. CWMI reports achieving compacted refuse densities of 0.6 tons to 1.0 cubic yard (or 1.0 ton = 1.7 cu/yd), whereas VRSD reports compacted refuse densities of 0.46 tons to 1.0 cubic yard (or 1.0 ton = 2.2 cu/yd). Naturally, the greater the compaction density, the longer the landfill will take to reach ultimate capacity. (Sources: VRSD data and RDSI, Simi Class II Valley Landfill, October, 1982).

o Western Wasteshed: Coastal/Bailard Landfill Capacity

The remaining capacity of the Coastal/Bailard Landfill as of 1982 is 12.4 million cubic yards according to information provided by the operator (VRSD). Using VRSD's conversion factor of 1.0 ton = 2.2 cu/yds., the remaining tonnage capacity at the Coastal/Bailard site is 5,636,364 tons. ($12.4 \text{ mil/cu/yds} \div 2.2 \text{ cu/yds} = 5,636,364 \text{ tons}$). Comparing this capacity figure with the high projected cumulative tonnage indicates capacity will be reached by 1992-93. The medium projected cumulative tonnages which assumes 250 tons/day will be diverted to a waste-to-energy plant, indicate capacity will be reached by 1995-96. The low projected cumulative tonnages, which assumes 500 tons/day will be diverted to a waste-to-energy plant, indicate capacity will be reached sometime between 1999-2000. (Table IV-13).

o Eastern Wasteshed: Simi Valley Landfill Capacity

The remaining capacity of the Simi Valley Landfill as of 1982, is 3.5 million cubic yards. Using the operator's conversion factor of 1.0 = 1.7 cu/yds., the remaining tonnage capacity at this site is 2,058,824 tons. ($3.5 \text{ mil/cu/yds} \div 1.7 \text{ cu/yds} = 2,058,824 \text{ tons}$). Comparing this capacity figure with the high, medium and low projections, Simi Valley landfill will reach capacity in 1991 using the high projections, 1992-93 using the medium projections, and between 1995-96 using the low projections (Table IV-14).

o Central Wasteshed: Toland Road Landfill Capacity

Remaining capacity for the Toland Road Landfill as of 1982, is 6.0 million cubic yards. This converts into 2,727,272 tons using VRSD's conversion factor of 1.0 ton = 2.2 cu/yds ($6.0 \text{ mil/cu/yds} \div 2.2 \text{ cu/yds} = 2,727,272 \text{ tons}$). Comparing this capacity figure with the cumulative tonnage figures indicates Toland Road Landfill has a site capacity beyond the year 2005, regardless of whether high, medium or low projections are utilized (Table IV-15). Ventura Regional Sanitation District has estimated Toland's site life to be roughly one hundred years.

TABLE IV-10

WESTERN WASTESHED AREA
CUMULATIVE WASTE LOADINGS

Year	<u>High Projections</u>		<u>Medium Projections</u>		<u>Low Projections</u>	
	Tons	Cumulative Tonnage	Tons	Cumulative Tonnage	Tons	Cumulative Tonnage
1982-1985	1,670,300	1,670,300	1,491,122	1,491,122	1,345,281	1,345,281
1985-1990	2,428,860	4,099,160	1,894,138	3,385,260	1,359,413	2,704,694
1990-1995	2,795,885	6,895,045	2,157,065	5,542,325	1,518,240	4,222,934
1995-2000	3,249,415	10,144,460	2,485,533	8,027,858	1,721,650	5,944,584
2000-2005	3,816,118	13,960,578	2,899,315	10,927,173	1,982,518	7,927,102

SOURCE: Ventura County Planning Division and VRSD data, 1982

TABLE IV-11

EASTERN WASTESHED AREA
CUMULATIVE WASTE LOADINGS

Year	High Projections		Medium Projections		Low Projections	
	Tons	Cumulative Tonnage	Tons	Cumulative Tonnage	Tons	Cumulative Tonnage
1982-1985	733,590	733,590	647,484	647,484	561,376	561,376
1985-1990	1,198,055	1,931,645	935,773	1,583,257	673,485	1,234,861
1990-1995	1,500,640	3,432,285	1,145,170	2,728,427	789,698	2,024,559
1995-2000	1,802,558	5,234,843	1,348,153	4,076,580	893,748	2,918,307
2000-2005	2,097,055	7,331,898	1,541,060	5,617,640	985,065	3,903,372

SOURCE: Ventura County Planning Division and VRSD data, 1982

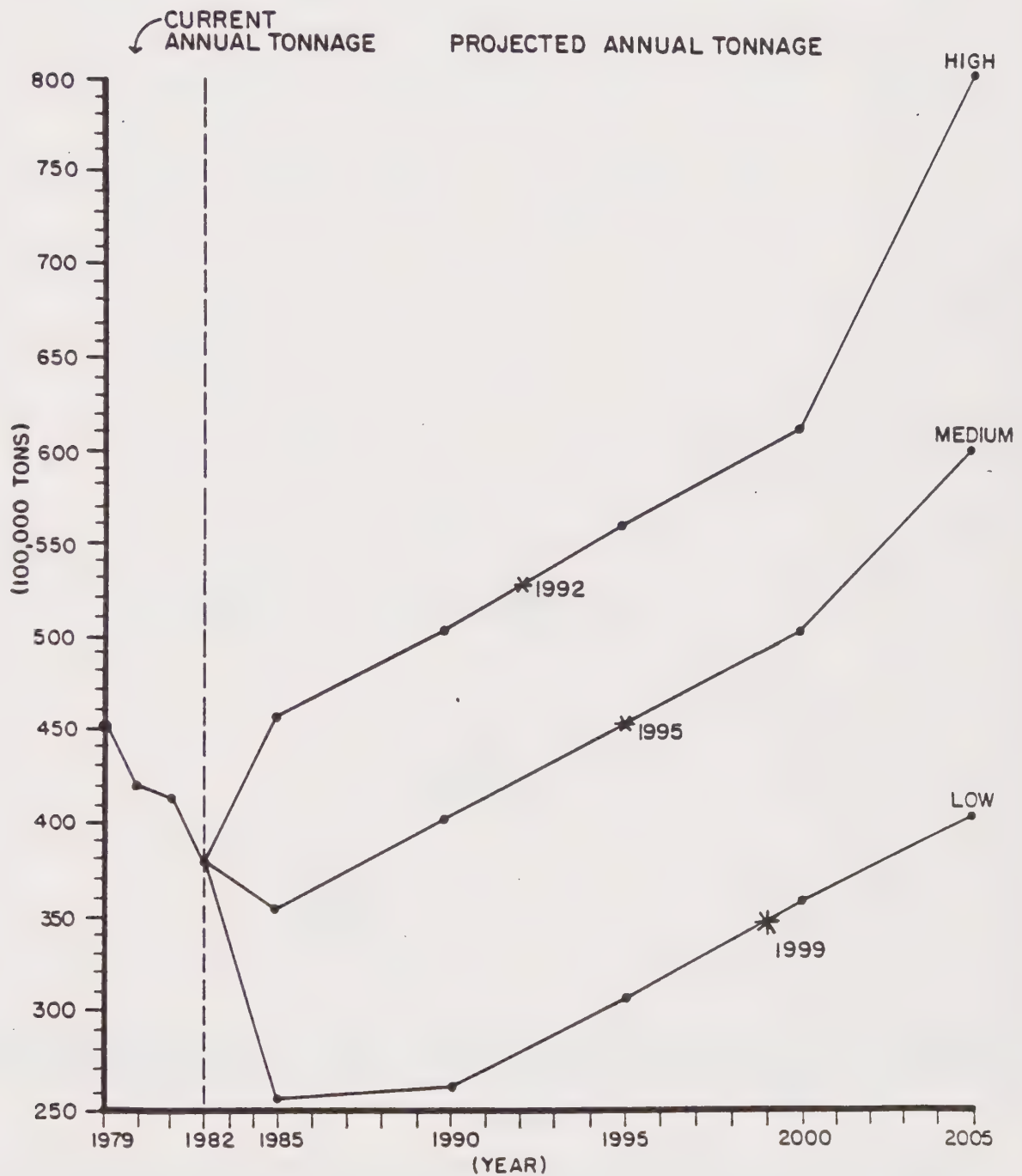
TABLE IV-12

CENTRAL WASTESHED AREA
CUMULATIVE WASTE LOADINGS

Year	<u>High Projections</u>		<u>Medium Projections</u>		<u>Low Projections</u>	
	Tons	Cumulative Tonnage	Tons	Cumulative Tonnage	Tons	Cumulative Tonnage
1982-1985	74,494	74,494	72,518	72,518	70,542	70,542
1985-1990	101,325	175,819	94,465	166,983	87,605	158,147
1990-1995	111,488	287,307	100,200	267,183	88,910	247,057
1995-2000	125,313	412,620	108,863	376,046	92,410	339,467
2000-2005	154,033	566,653	128,628	504,674	103,223	442,690

SOURCE: Ventura County Planning Division and VRSD data, 1982

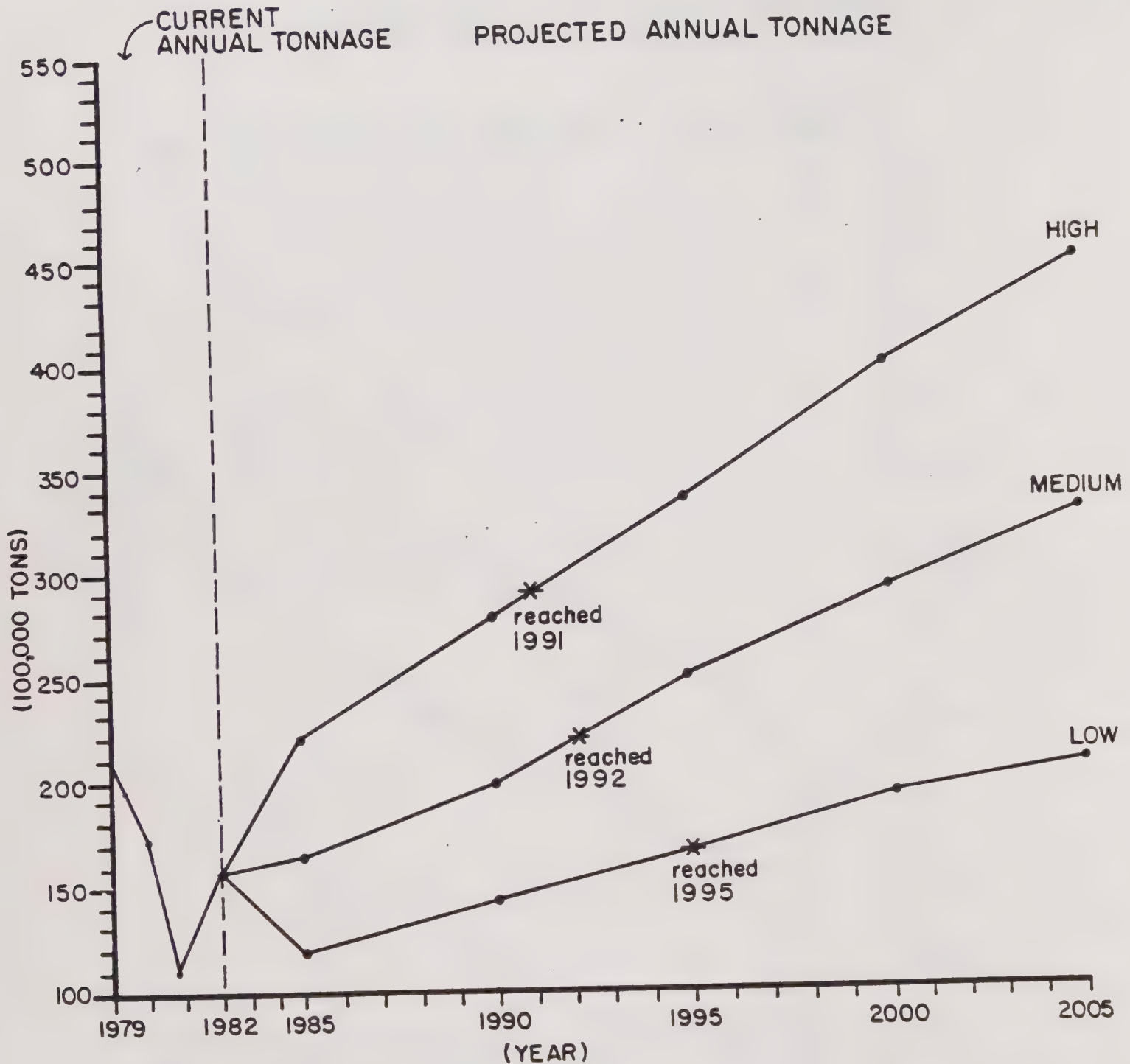
TABLE IV-13
 REMAINING CAPACITY AT COASTAL/BAILARD LANDFILL*
 AND WESTERN WASTESHED AREA PROJECTIONS



* INDICATES WHEN LANDFILL CAPACITY WILL BE REACHED.

SOURCE: Ventura County Planning Division data, 1982

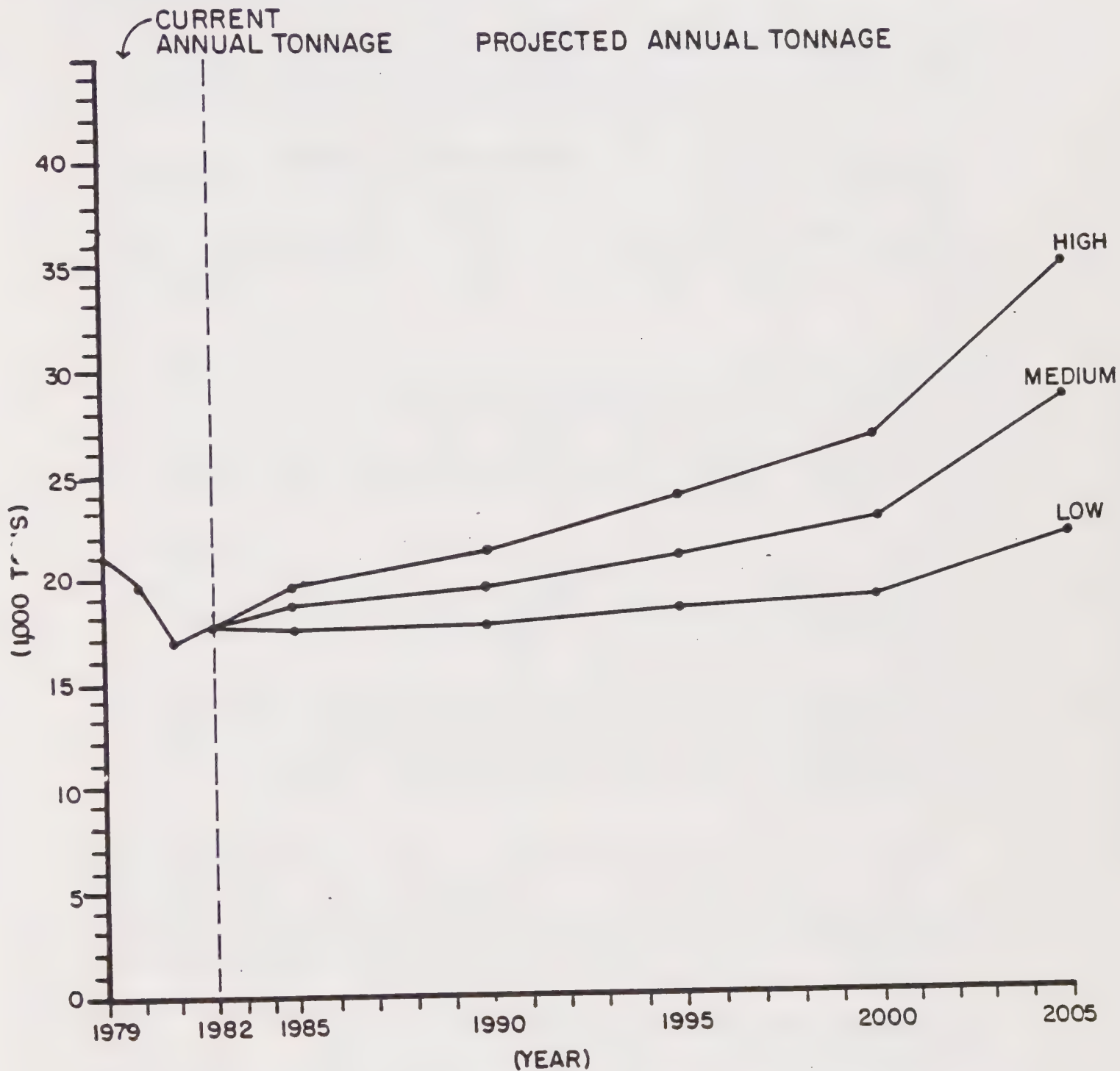
TABLE IV-14
 REMAINING CAPACITY AT SIMI VALLEY LANDFILL
 AND EASTERN WASTESHED AREA PROJECTIONS *



* INDICATES WHEN LANDFILL CAPACITY WILL BE REACHED

SOURCE: Ventura County Planning Division data, 1982

TABLE IV-15
 REMAINING CAPACITY AT TOLAND ROAD LANDFILL*
 AND CENTRAL WASTESHED AREA PROJECTIONS



* TOLAND ROAD LANDFILL HAS SUFFICIENT CAPACITY BEYOND 2005

SOURCE: Ventura County Planning Division data, 1982

4.6 CoSWMP PROPOSED PROJECTS AFFECTING LANDFILL CAPACITIES

Simi Valley Landfill Expansion

The Simi Valley landfill site owner/operator, Waste Management Incorporated (CWMI) has recently proposed modification to the existing Solid Waste Facility Permit (SWFP), by increasing the planned lift elevations at the site. This modification would serve to extend the life of the landfill approximately twenty-five years beyond the current projected closure dates of 1991-1996 depending upon whether high, medium, or low projections are utilized. The Simi Valley landfill is located in the eastern wasteshed area.

4.7 PRIVATE SECTOR PROPOSED PROJECT AFFECTING LANDFILL CAPACITIES

Waste-to-Energy Plant

A waste-to-energy plant was proposed for the western wasteshed area. If operating at planned capacity, such a plant could divert 156,500 tons of solid waste annually from landfill disposal. Though now inactive, this proposal is reflected in the low and medium projections for this wasteshed area.

4.8 FINDINGS

A. Western Wasteshed Area; Coastal/Bailard Landfill

The western wasteshed area appears the most logical wasteshed to site a new landfill. The Coastal and Bailard landfills, as presently permitted, will reach capacity by 1990.

The western wasteshed area serves the majority of the population in Ventura County, and is projected to do so through the year 2005. The western wasteshed area has a population of 319,447 people compared with the eastern wasteshed's population of 200,843, and the central wasteshed's population of 38,403 (Table IV-1, 1982 column).

In 1982, the western wasteshed area also landfilled a higher tonnage of solid waste than any other wasteshed and is expected to continue to do so in the future. A total of 384,237 tons of solid waste was landfilled in the western wasteshed, compared to only 159,202 tons in the eastern wasteshed, and a mere 17,650 tons in the central wasteshed areas. (Table IV-3 to IV-5).

Finally, the western wasteshed generates more waste per capita than any other wasteshed and will continue to do so according to projections. The western wasteshed generated 7.07 pounds/person/day in 1982 compared to 6.85 pounds/person/day in the eastern wasteshed and only 2.79 pounds/person/day in the central wasteshed. (Table IV-3 to IV-5). Therefore, the western wasteshed area has the most critical need of all the County's wasteshed areas, for locating a new landfill site.

B. Eastern Wasteshed Area; Simi Valley Landfill

According to the waste projections made for this wasteshed area, the Simi Valley landfill is expected to reach capacity sometime between 1991 and 1996. However, the site owner/operator has recently proposed to modify the lift elevations at the site, which would have a net result of extending the landfill life approximately twenty-five years beyond the

current projected closure date. In light of this, and information provided in the first finding, the need to locate a new landfill site in the eastern wasteshed area is not necessary at this time.

C. Central Wasteshed Area, Toland Road Landfill

Waste projections for this wasteshed area show that there is sufficient capacity at the Toland Road landfill beyond the year 2005, if landfills continue to operate in the central and western wasteshed areas. Therefore, for the short-term planning period, the central wasteshed area does not exhibit a critical need for siting a new landfill.

Although no new projects have been proposed specifically for this landfill or wasteshed area, the previously mentioned projects could have an indirect, but devastating domino affect on the landfill that appears, at first glance to have more than adequate site life, such as Toland Road which has an estimated life of 100 (\pm) years.

o Scenario #1

Assumes the waste-to-energy plant fails, or does not come on-line and that the Coastal/Bailard closes in 1992 using the high projections and no new site is operating in the western wasteshed. Also, it assumes that this waste which will continue to be generated in the western wasteshed, is now disposed at the Toland Road landfill. Using high projections Toland Road landfill would reach maximum capacity and close by 1996-97. In other words, it would take only 4-5 years to fill Toland Road landfill if no new site is operating after the closure of the Coastal/Bailard landfill.

o Scenario #2

Assumes a waste-to-energy plant begins operating in 1986 and operates at the planned capacity of 500 tons/day. This assumes no new disposal site is located and the Coastal/Bailard landfill reaches capacity by the low projected closure date of 2000. How long would it take Toland Road landfill to reach capacity, if all of the waste generated in the western wasteshed is suddenly diverted to the central wasteshed for disposal? Using low projections it would take only 5-6 years for Toland Road landfill to reach capacity from the time the Coastal/Bailard landfill closure in 2000. Thus, by as early as 2005, Toland Road landfill could reach capacity if a new site is not located and by the time the Coastal/Bailard site fills to capacity.

4.9 RECOMMENDATIONS

- A. Identify and establish operation of a new Class II landfill disposal facility in the western wasteshed area by 1991 in order to provide needed future disposal capacity.

Responsible Agencies: Ventura County Planning Division* is responsible for identifying potential Class II landfill locations. Either VRSD, or private industry will be responsible for operating a new site.

Estimated Resources Required: No additional resources are required as this is part of the ongoing CoSWMP update. However, resources will need to be identified to purchase/lease a new site as well as operate a site.

Schedule: Short to mid-term planning period.

* Indicates the lead agency

CHAPTER V - RESOURCE RECOVERY

5.1 INTRODUCTION

A. Overview

This chapter describes the existing resource recovery system in Ventura County and evaluates potential measures which can be undertaken in the future. The goal of this chapter is to review the potential for expanding resource recovery in Ventura County in order both to decrease the quantity of wastes which are now landfilled, and to conserve natural resources.

B. Summary of Recommendations

A summary evaluation of the primary resource recovery strategies discussed in this chapter and recommended actions follow:

Resource Recovery is very much affected by economic conditions as well as technological developments. It is thereby difficult to predict the feasibility of various recovery alternatives. Therefore, a variety of proposals are discussed. Those that appear practical from a preliminary standpoint can be studied, on a trial basis; those which prove most successful can be pursued. The following resource recovery strategies deserve consideration:

1) Resource Recovery Study

A comprehensive resource recovery study is needed to evaluate the resource recovery proposals presented here and how best to implement them. In addition, possible grant funding sources, for example to initiate a pilot curbside recycling program, should be investigated.

2) Recycling

While Ventura County currently recycles 22% of its solid waste, a major fraction of this amount is concentrated in only a few materials, cardboard and asphalt/concrete. Only a very minor percentage of primary wastes (primarily newspapers, aluminum and mixed metals, and glass) are currently recycled in Ventura County. A considerable potential thus exists for recycling primary waste materials.

In some areas, curbside recycling programs have achieved a 25% or greater recycling rate. If a curbside recycling program were that successful in Ventura County, a significant reduction in landfill waste would occur. A more detailed study (as a component of the comprehensive resource recovery study) of curbside recycling appears warranted to be followed by possible initiation of pilot projects in selected areas of the County.

Landfill Gas

Various landfill gas projects are being considered in the design of most new landfills in California. Production of landfill gas at a new County landfill site would provide an array of benefits, including energy generation and reduction in environmental and land use impacts. Such a project would be pursued as part of establishing any new landfill site. Inclusion of a landfill gas recovery system could be required as a condition of approval of future landfills.

C. Cogeneration

Waste-to-energy technology offers a possible viable alternative to landfilling of municipal waste. A successful waste to energy-cogeneration project would substantially reduce solid waste to be landfilled. Considerable electrical energy would be generated (SCE's Ormond Beach Power Plant provides an ideal market for a large waste to energy facility in Ventura County).

The United States Conference of Mayors in October 1984 selected the City of Oxnard to receive technical assistance on the feasibility of waste-to-energy projects in western Ventura County. The potential benefits of a successful waste-to-energy project warrant ongoing assessment by the VRSD, City of Oxnard and the County.

The role of the private sector is crucial in waste to energy cogeneration projects. An effort to actively solicit private sector interest in establishing a facility at Ormond Beach is warranted. In addition, the feasibility of establishing small-scale cogeneration facilities should be further studied and private sector interest sought.

D. Composting

Large scale composting plants do not appear immediately feasible in Ventura County currently due to the absence of a market for the end product. Should markets be verified in the future, the County should further consider composting proposals.

E. Drop-Off/Buy-Back Centers

The establishment of additional drop-off or buy-back centers could result in a significant reduction in solid wastes going to landfills. These recycling centers could be considered on a trial basis at major activity centers (Buenaventura Mall, Esplanade, Oaks Mall, Government Center etc.). The potential for expanding efforts in this area will be examined in the proposed Resource Recovery Study.

F. Design Considerations for New Landfill

Potential resource recovery options (i.e., curbside recycling, waste to energy, etc.) may divert a significant volume of wastes which would otherwise be landfilled, thereby affecting the economic viability of a new landfill. Therefore, the design and administration of a new County

landfill should be determined in conjunction with the development of the various resource recovery strategies. For example, phasing, or staged expansion of the landfill, may be appropriate.

G. Legislation

Legislation focusing upon the sources of waste generation can significantly affect the volume of solid wastes. In addition, legislation aimed at streamlining regulations and processing of waste to energy and landfill gas projects would help facilitate those projects. Therefore, the County should support legislation which encourages waste reduction (i.e., packaging legislation, beverage deposits, etc.) and resource recovery.

5.2 THE EXISTING RESOURCE RECOVERY SYSTEM

A. Overview

Of the 686,000 tons of solid waste generated in 1981-1982 in Ventura County, an estimated 124,000 tons, or 22%, were recycled (and 562,000 tons were landfilled). (Figure V-1, Table V-1) Of this amount, cardboard (60,106 tons), asphalt/concrete (26,000 tons), and paper products (14,459 tons) accounted for the majority of recycled wastes (which would otherwise normally have been landfilled). In addition, a significant tonnage of materials, not normally landfilled (metals, autos, and mushroom compost), were also recycled. This translates to a savings of approximately 24 acre feet or 240,000 cubic yards of landfill space (based on 10,000 cubic yards of waste per acre of landfill).

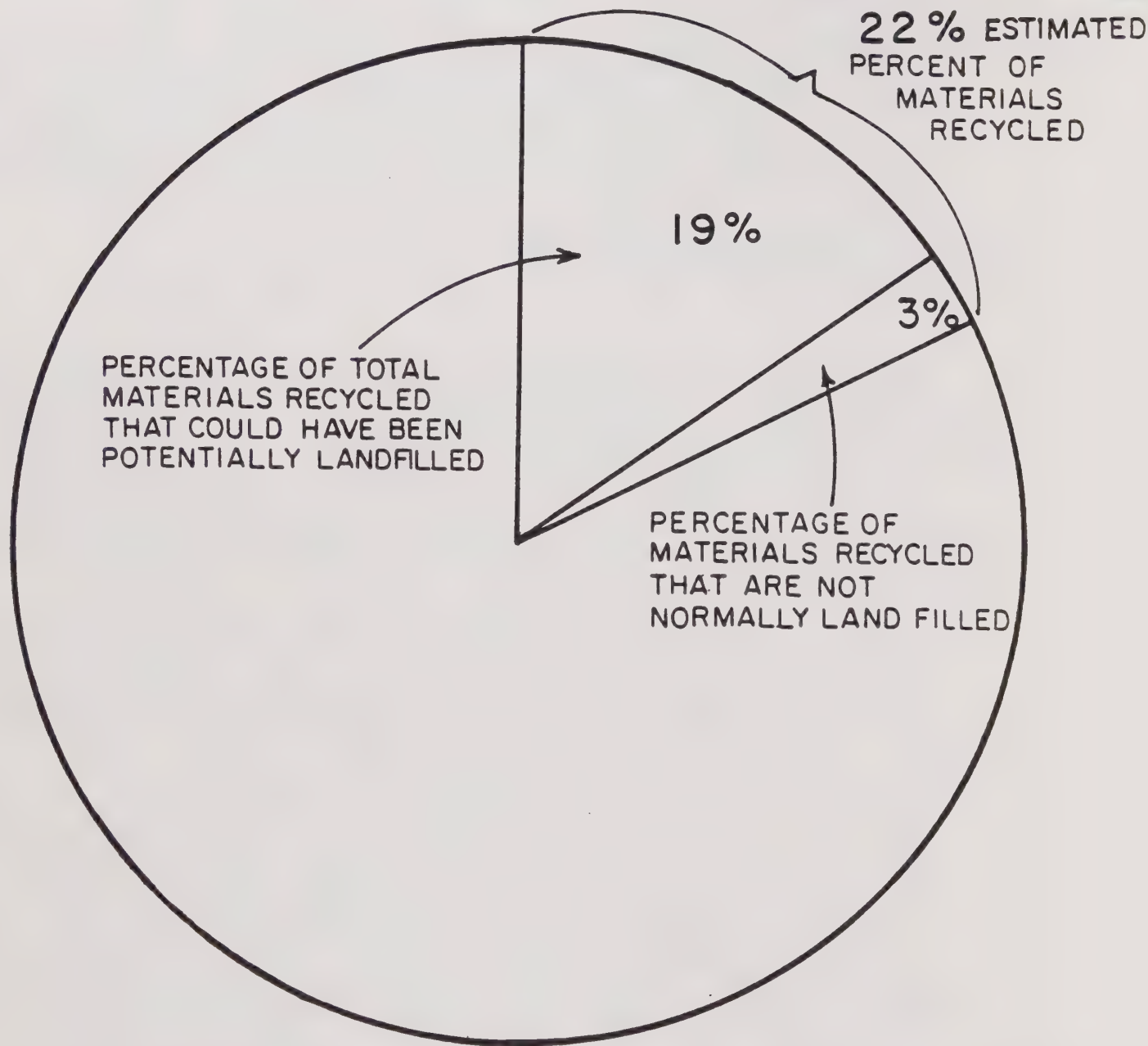
Current recycling programs in Ventura County have centered upon buy back and drop off centers. These programs include those implemented by local government agencies including cities and counties, VRSD, commercial businesses, concerned individuals, and a wide variety of community groups. Many community groups use material recovery "drives" to raise funds.

The dollar value of recycled materials in Ventura County in 1982 was estimated to be 5 to 6 million dollars, considering average prices for those materials reported for the survey. The major revenue producers in the County during 1982, were cardboard, aluminum cans, and newspapers. Many other less valuable materials such as glass, mattresses, wood chips, and plastic were also recycled. None of these latter materials were reported as recycled in the 1975 CoSWMP. This diversification of materials being recycled in Ventura County in 1982, as compared to that reported in 1975, suggests a more stable and healthier resource recovery climate is developing that will likely better withstand future price and supply/demand fluctuations. (References V-5 and V-6). Estimates of materials by category recycled in 1982 are presented in Tables V-1 and V-2.

In 1975, non-profit organizations made up the majority of recyclers in the County. The 1982 survey indicates more commercial businesses have since become involved in recycling.

FIGURE V -1

1982 SURVEY ESTIMATE OF MATERIALS
RECYCLED (PERCENT BY WEIGHT) COMPARED
TO TOTAL QUANTITY OF WASTE DISPOSAL



ESTIMATED TOTAL WASTE DISPOSED DURING 1982 (CHAPTER IV)=562,289 TONS OR 100%.

19% = 107,553 TONS OF MATERIALS RECYCLED THAT COULD POTENTIALLY BE LAND FILLED.

3% = 16,507 TONS OF MATERIALS RECYCLED THAT ARE NOT NORMALLY LANDFILLED.

22% = 124,060 TONS / YEAR OF TOTAL MATERIALS REPORTED RECYCLED FOR 1982 SURVEY.

SOURCE: VENTURA COUNTY PLANNING DIVISION 1982

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TABLE V-1
1982 SURVEY ESTIMATE OF MATERIALS
RECYCLED IN VENTURA COUNTY

<u>MAJOR ITEMS</u> (High Potential for Landfilling)	1981-1982 AVERAGE ANNUAL TONS
Cardboard	60,106
Asphalt/Concrete	26,000
Newspaper	13,287
Wood Chips	6,000
Mixed Paper	852
Aluminum	676
Computer Paper	307
Glass	150
Tires	84
Mattresses	66
White Office Paper	13
Plastic	12
<hr/>	
Sub Total	107,553 tons/yr.
 <u>SECONDARY ITEMS</u> (Not Normally Landfilled)	
Mixed Metals	11,916
Salvaged Autos	4,500
Oil (14,200 gal. at 7 pounds per gal.)	55
Batteries	36
Mushroom Compost	10,454
<hr/>	
Sub Total	16,507 tons/yr.
Grand Total	124,060 ton/yr.

SOURCE: Ventura County
 Planning Division
 1982 Survey Results

TABLE V-2
RESULTS OF VENTURA COUNTY RESOURCE RECOVERY
SURVEY CONDUCTED IN 1982

<u>NON PROFIT/DONATION CENTERS</u>	<u>ITEMS RECYCLED</u>	<u>1981-1982 MONTHLY AVERAGES</u>
Conejo Environmental League (Thousand Oaks/Westlake)	Newspaper	38.5 Tons/Mo.
	Computer Paper	5.3 Tons/Mo.
	Glass	4.4 Tons/Mo.
	Cardboard	3.3 Tons/Mo.
	Mixed Metal	1.3 Tons/Mo.
	Aluminum	1/12 Ton/Mo.
Boys' and Girls' Club of Ventura	Newspaper	20 Tons/Mo.
Boys' and Girls' Club of Oxnard	Newspaper	12 Tons/Mo.
Boys' and Girls' Club of Camarillo	Newspaper	600 Tons/Mo.
	Glass	1 Ton/Mo.
	Aluminum	2 Tons/Mo.
	Cardboard	2 Tons/Mo.
	Plastic	1 Ton/Mo.
	Oil	100 Gal./Mo.
Boys' and Girls' Club of Santa Paula	Newspaper	25 Tons/Mo.
	Aluminum	1/2 Ton/Mo.
Recycling and Environmental Action Program (R.E.A.P.) Ojai	Newspaper	25 Tons/Mo.
	Aluminum	1/6 Ton/Mo.
	Mixed Metals	1/3 Ton/Mo.
<u>BUY BACK CENTERS</u>		
Ojai Resource Recovery	Wood Chips	500 Tons/Mo.
Basso Distributing (Camarillo)	Aluminum	40 Tons/Mo.
Walkers Recycling (Saticoy)	Newspapers	75 Tons/Mo.
	Mixed Metals	150 Tons/Mo.
	Cardboard	200 Tons/Mo.
	Mixed Paper	60 Tons/Mo.
	Glass	3 Tons/Mo.
	Aluminum	15 Tons/Mo.
Pacific Recycling (Oxnard)	Mixed Metals	600 Tons/Mo.
	Newspaper	100 Tons/Mo.
Oxnard Metal Co. (Oxnard)	Mixed Metals	No data available
Leisure Habits (Simi Valley)	Newspaper	100 Tons/Mo.
	Glass	5 Tons/Mo.
	Mixed Metals	10 Tons/Mo.
	Mixed Paper	10 Tons/Mo.
	Cardboard	10 Tons/Mo.
	Aluminum	2 Tons/Mo.

Ralphs Supermarkets (Simi Valley) (Moorpark) (Recycling Conducted by Reynolds Aluminum Corp.)	Aluminum	13.4 Tons/Mo.
Western Kraft	Cardboard	4700 Tons/Mo.
Castle and Cooke Foods Inc.	Compost	10,454 Tons/Mo.
Sespe Enterprises (Santa Paula)	No data available	

GOVERNMENT RECYCLING

Defense Property Disposal Office (Port Hueneme)	Cardboard	4.6 Tons/Mo.
	Computer Paper	16.9 Tons/Mo.
	Mixed Metals	100 Tons/Mo.
	Aluminum	1/2 Ton/Mo.
	Glass	3 Tons/Mo.
	Tires	1 Ton/Mo.
	Batteries	3 Tons/Mo.
	Oil	783 Gals/Mo.
Ventura County Government Center (Ventura)	White office & Computer Paper	4 Tons/Mo.
Ventura Regional County Sanitation District - Ventura County (Landfill Sites and Buy Back Center Office)	Newspaper	120 Tons/Mo.
	Mixed Metals	100 Tons/Mo.
	Aluminum	5.6 Tons/Mo.
	Oil	200 Gal./Mo.
	Tires	6 Tons/Mo.
	Asphalt/Concrete	2000 Tons/Mo.
	Mattresses	200 Ea./Mo.
	Computer Paper	1/4 Ton/Mo.
	Office Paper	1/8 Ton/Mo.
City of Oxnard	White Office Paper	1/12 Ton/Mo.
	Mixed Metals	1 Ton/Mo.
	Oil	100 Gals./Mo.
City of Simi Valley	White Office Paper	1/16 Ton/Mo.
	Mixed Metals	1/2 Ton/Mo.
	Aluminum	1/3 Ton/Yr.
City of Fillmore	White Office Paper	1/6 Ton/Mo. (Discon- tinued Program 1982)
City of San Buenaventura	White Office Paper	1/2 Ton/Mo.

Source: Ventura County Planning Division Survey Data 1981-82 and VRSD Data for 1981.

Since 1975, there has been a net increase of four additional non-profit donation centers and two additional buy-back centers. Results of the 1982 survey also indicate an increase in tonnages of materials recycled when compared to tonnages reported in the 1975 CoSWMP. Some of the largest increases in tonnages recycled in 1981-1982, were reported for corrugated cardboard. In 1975, Western Kraft, one of the County's largest cardboard recyclers, reported recycling 1,400 tons per month (Reference V-5). For the 1982 survey, they reported recycling 4,700 tons of cardboard a month (Table V-2). However, an unknown quantity of Western Kraft Cardboard may be imported from Los Angeles County, thereby decreasing the total tonnage recycled by Ventura County residents.

B. Current Programs

1. Community Programs

Group efforts in recycling within Ventura County are exemplified in the non-profit sector. Such recyclers include the Conejo Environmental League, operators of a donation center in Thousand Oaks, and the Resource Environmental Action Program (R.E.A.P.) in Ojai. In addition to these groups, the Boys' and Girls' Clubs of each city operate newspaper donation centers. The Boy Scouts and local schools and churches also sponsor paper drives.

Community citizen groups and/or environmental action groups reported recycling approximately 8,957 tons of materials, or 6 percent of the total amount of materials for the 1982 survey (Figure V-2). Such efforts are characterized by strategically located recycling centers in Thousand Oaks, Ventura, Oxnard, Camarillo, Santa Paula, and Ojai. These centers are staffed by volunteer labor, and usually open only on the weekends. The general public can take recyclable materials such as newspapers, steel scrap, aluminum scraps, glass, cardboard, computer paper, and ledger sheets to these centers for recycling. It is through these local citizen organizations that the general public can be served, and support gained for increased recycling efforts. A complete listing of community facilities is shown in Table V-2. Any civic group or club is capable of sponsoring recycling programs, and if the market increases for recyclables, this type of fund raising will become more attractive for community groups.

VRSD has an individual available to assist citizen groups in recycling. County staff support is also available to help in any future recycling/resource recovery projects that public or private groups wish to pursue.

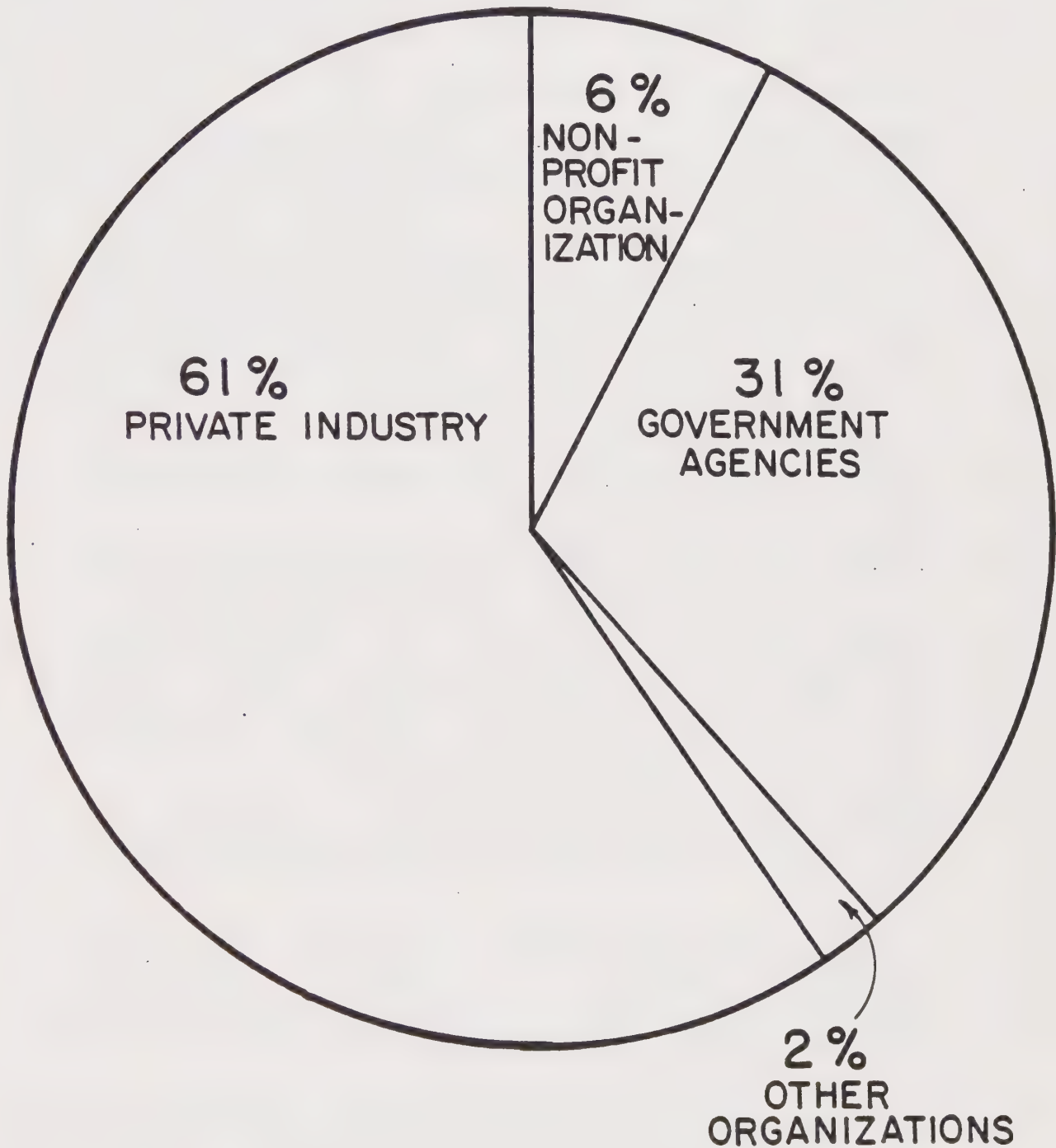
2. Private Operations

There are nine private firms that altogether reported recycling approximately 56,400 tons of materials in 1982. This accounts for approximately 6 percent of the total materials recycled in Ventura County (Figure V-2). These businessmen operate buyback centers which originally evolved from scrap metal dealerships and eventually branched into other materials (such as newspaper) as the market proved favorable.

Some material recovery efforts have been in existence in the County for many years. Grease trap pumpings from commercial establishments, such as restaurants, have long been collected by a private company in Ventura County and sold to a plant in Los Angeles.

FIGURE V-2

1982 ESTIMATE OF MATERIALS
RECYCLED (PERCENT BY WEIGHT) BY
TYPE OF ORGANIZATION



Gas stations have long been collection centers for used crankcase oil. Only recently have they received a bulk rate from pumping companies, who remove the oil and sell it in the Los Angeles area where it is reprocessed. Auto salvage yards have been an established business in the county for as long as the automobile has been in existence. There are eighteen auto salvage yards in Ventura County (Table V-3). The smallest volume salvage yard processes 50 autos a year, while the largest processes approximately 600 a year. According to the 1981-82 survey, it is estimated that in one year a total of 4,500 autos are processed in Ventura County (Reference V-8).

3. Resource Recovery By Government Agencies

Government (Federal, County, City) accounts for approximately 74,443 tons of materials recycled or 31 percent of Ventura County's recycling efforts (Figure V-2). Many government organizations support in-house recycling programs as follows:

- o Federal Government - On the federal level the Defense Property Disposal Office (DPDO), which is located in Port Hueneme, California provides resource recovery services for NCBC Port Hueneme, NAS Point Mugu, and San Nicholas Island. In addition, this office provides similar services for other defense activities located within a 50 mile radius of Port Hueneme. In 1982, this facility reported that it was responsible for recycling approximately 1,548 tons of materials and 9,396 gallons of oil (Table V-2 and Reference V-7). Aluminum cans were donated to local community organizations, such as the Boy and Girl Scouts of America.
- o County - The County of Ventura has had a white office paper recovery program since 1980 at the County Government Center. In 1982, the County Purchasing Department reported approximately 12 tons of white office paper recycled. In addition to white office paper, the County also recycles 36 tons a year of computer papers and approximately 1 ton of aluminum cans which are picked up and donated to local non-profit community organizations, such as the Boy and Girl Scouts programs (Table V-2). The County also purchases 10 percent recycled paper for use on a daily basis. School Districts also report recycling of white office paper.
- o VRSD - Ventura Regional Sanitation District (VRSD) retains a full time resource recovery coordinator to oversee ongoing programs, and to consider the feasibility of new resource recovery efforts within VRSD.

The major ongoing VRSD resource recovery effort consists of material recovery at the Santa Clara landfill site. The two resource recovery workers employed at the site and their equipment are partially financed through recovery of materials. The following describes those materials recovered by VRSD:

The metal recovery program includes the Santa Clara Landfill and the Ojai Antilitter Station. VRSD has entered into a contract with local private scrap dealers to provide containers at the landfill site. The dealers transport the containers, when full from the site to the dealer's handling and separation facilities, where the containers are marketed. The scrap dealer pays VRSD for the metals on a tonnage basis, at the price per ton being quoted by daily metal trade publications. In six years, the District has diverted over 7600 tons of metal.

TABLE V-3

AUTOMOBILE SALVAGE YARDS

Ace Auto Parts and Salvage
Acme Auto Wreckers
Auto Parts International
B & S Auto Parts and Salvage
Chuck's Auto Parts and Salvage
Chuck's Auto Parts and Salvage, Inc.
Coast Auto Salvage
Fillmore Auto Dismantling
Hueneme Auto Salvage
Lynn's Towing
Progressive Auto Parts and Salvage
Rosco's Auto Salvage
Santa Paula Car and Truck Wrecking
Simi Valley Auto Wrecking
Tri-County Auto Dismantlers
Tri-County Motorcycle Salvage
Ventura Auto Salvage, Inc.
Western Auto Wrecking

Source: VRSD, 1981 Data
RMA, Planning, 1982 Data

At the Santa Clara site, approximately 120 tons of newspaper are currently purchased each month by the District from the public. This paper is transported to the Garden State Paper Company in Pomona, where it is recycled into new newsprint. A contract with Garden State Paper provides for guaranteed sales and a floor price (Table V-2).

VRSD cardboard recycling program at the Santa Clara site has been discontinued temporarily because of economics. Negotiations have begun with a local recycler to contract for cardboard recovery services.

Approximately 2,500 mattresses and box springs are recovered and sold annually under contract to a company which refurbishes and recycles the bedding materials.

Asphalt and concrete are stockpiled at the Santa Clara site for crushing by the Granite Construction Company. This material is purchased from the District and reconverted into road base. Results from the first year indicate 48,000 tons of material was crushed, 20 tons of waste was landfilled, with the remainder converted into road base (Table V-2). Benefits include savings through decreased mining, energy consumption, and landfill space.

Six tons of rubber tires are sold each month to a firm from Mexico for regrooving (Table V-2). Mixing rubber with asphalt is meeting with limited success for road materials, but it does show potential. Extraction of oil from rubber is currently too costly in terms of the energy recovered, but is a possibility in the future. Tires are also shredded here for fuel in Northern California.

One-eighth of a ton of white paper is currently being recycled each month from VRSD offices. Allan Paper Company collects and processes it in their plant in Los Angeles.

A project to recover grease trap pumpings is currently underway at the Oxnard Waste Water treatment plant. Grease is recovered through the waste water treatment process and stored onsite until several thousand gallons accumulate. Southwest Processors recycles the grease, and the City of Oxnard benefits by not having to treat this type of liquid.

VRSD has recently begun buying used crankcase oil at the Santa Clara Landfill. This used oil is sold to a firm for reprocessing.

Additional materials are under consideration for recovery. Wood is being considered for recovery as firewood or scrap lumber. A potential exists for wood chips, but shredding and transportation to distant markets is presently uneconomical. Plastic and glass recovery is also being studied by VRSD. Plastics recycling is presently proving successful in larger urban areas where bleach, milk, and other polyethylene terephthalate products (PTP) can be returned to recycling centers and recovered. Because of the large amounts of petroleum used in the manufacturing of plastic, and to a lesser degree glass, oil prices are a prime factor affecting the economics recycling these materials.

- o Cities - All nine cities then in existence were contacted for the 1982 CoSWMP Resource Recovery Survey. Four cities (Oxnard, Simi Valley, Fillmore and Ventura) reported recycling activities (Table V-2). Three cities (Fillmore, Ventura, Oxnard) indicated that the volume of office paper generated is small, and due to current low market prices, these cities have temporarily discontinued recycling efforts. All cities expressed an interest in assisting the County in any coordinated effort for recycling of materials.

4. Other Organizations

Organizations such as the Salvation Army and local church groups provide for the recycling of unwanted clothes and furniture, and they also maintain donation centers. Since the Salvation Army does not maintain any tonnage records and churches usually sell their recovered materials to the major commercial buy back centers, they were not specifically included in the 1982 survey conducted by County staff. However, it is estimated that they account for approximately 2 percent of the total materials recycled (their figures are included in the buy back tonnage figures).

C. Material Trends

The majority of materials recovered or recycled in Ventura County are sent to major markets in Los Angeles. Over the past three years, prices paid for recovered materials have fluctuated, causing unstable markets and a decrease in the recovery of some materials (office paper, metals and mixed paper) in the county (Reference V-6). However, other materials have increased in tonnage reported, especially cardboard, oil, and tires (which are regrooved).

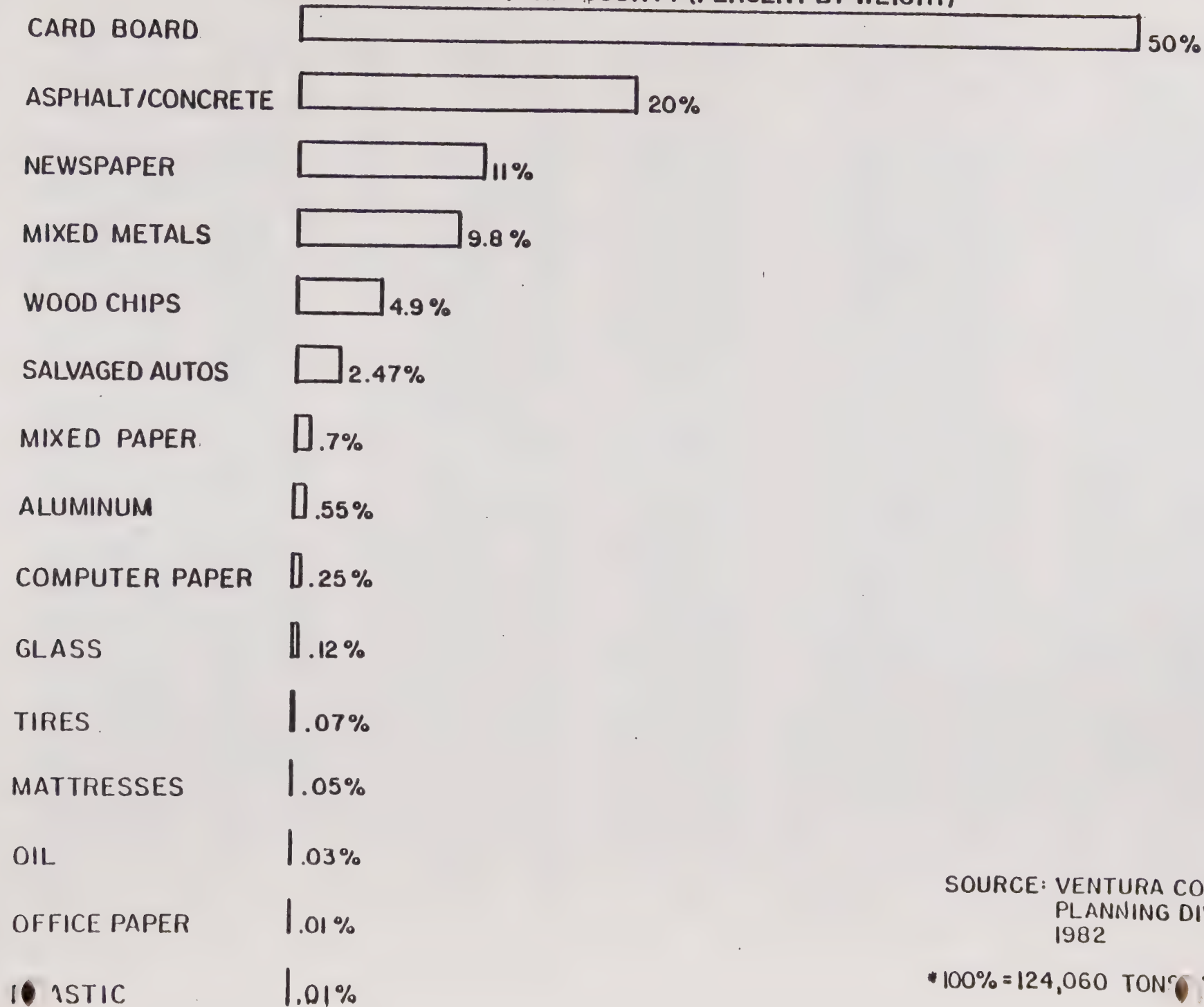
The metal with the best return in the county was reported to be aluminum which is currently priced between 20 and 32 cents a pound (Reference V-10). Cardboard was the highest tonnage material recycled (60,106 tons) and accounted for approximately 50 percent of the total materials recycled in Ventura County during 1981-82 on a weight comparison basis (Figure V-3). However, the quantities of cardboard recycled by Western Kraft includes an unknown quantity from Los Angeles County.

The following is an analysis of materials and market trends for Ventura County, based on data collected by staff for the survey conducted in 1982.

- o Cardboard - Cardboard accounted for 60,106 tons or 50 percent (by weight) of the materials recycled in 1982 (Table V-1, Figure V-3). Cardboard was recycled at one donation center operated by the Conejo Environmental League and by three commercial buy back centers. The largest commercial recycler of cardboard in the county, Western Kraft, reported 56,400 tons of cardboard recycled in 1982 (Table V-2).

Used cardboard is mainly purchased from large grocery chains and other stores in the county and is used in the manufacturing of new corrugated boxes. At the end of 1982, cardboard for recycling was up to 61 dollars a ton, from a low of 50 dollars. The upward turn in prices reflects an upward turn in demand which is expected to continue throughout the coming years.

FIGURE V-3
 *1982 SURVEY ESTIMATE OF PERCENT OF MATERIALS
 RECYCLED IN VENTURA COUNTY (PERCENT BY WEIGHT)



SOURCE: VENTURA COUNTY
 PLANNING DIV. SURVEY
 1982

*100% = 124,060 TONS YEAR

- o Asphalt/Concrete - New construction has begun on Route 101 from Thousand Oaks to Oxnard. Over this entire stretch of freeway, Cal Trans will be using approximately 100,000 tons of reprocessed asphalt. A contractor will crush the asphalt from the old roadway and use it as a base for the new road bed. VRSD, at its Santa Clara Landfill Site, has a contract with Granite Construction Company to recycle asphalt and concrete. In 1982, VRSD reported recycling 24,000 tons (Table V-2), at twenty-five cents a ton. Asphalt and concrete recycling accounted for an estimated 20 percent (Figure V-3) of the materials recycled in Ventura County, however cost of recycling this item is not known at this time.
- o Newspaper - During this update of the CoSWMP, staff conducted a survey of circulation rates for four major county newspapers (i.e., L.A. Times, Herald Examiner, Star Free Press, Press Courier) and four local newspapers (i.e., Camarillo Daily News, Simi Valley Mirror, Ojai Daily News, Fillmore Herald). From the information received, it is estimated that 45½ million copies of newspapers are read and discarded annually in Ventura County. However, since newspaper weight varies drastically, an annual total available tonnage projection could not be made.

According to the staff survey, an estimated 13,287 tons of newspapers were reported recycled for a 12-month period (1981-1982). This represents approximately 11 percent of the total amount of materials recycled in the county. The fluctuation in newspaper prices (20 to 35 dollars a ton) which occurred during 1980 to 1982, caused problems for recyclers, since large volumes of newspapers required storing until prices increased (Table V-1, Figure V-3).

Newspapers recycled in Ventura County find their way to both local and, in some cases, overseas markets such as Japan. Recycled newspapers can either be de-inked and reprinted on, or used for rag content only. Traditionally, "clean newspapers", those without "slick" inserts or magazines, sell at a higher price than those containing inserts or magazines. It is expected that newspapers will continue to be a large volume of Ventura County's recycling efforts, if prices remain stable. However, there is often a large fluctuation in paper prices which can act as a deterrent to recovery efforts.

- o Wood and Compost - Ojai Resource Recovery reported recycling wood chips made from chipping brush. This not only saves needed landfill space (approximately 2.2 cubic yards per ton of recycled material), but it is also sold as a mulch for local gardens. This operation recycled approximately 6,000 tons of wood chips in 1982 which accounts for an estimated 4.9 percent of the total materials recycled in Ventura County (Table V-2, Figure V-3).

In addition, many local farmers and agri-businesses recycle manures and other materials that can be composted or used as a soil amendment. Castle and Cooke Foods recycled 10,454 tons (Table V-2) of mushroom compost in 1982. This is approximately a 1,000 percent increase over the amount of mushroom compost they recycled in 1976 (Reference V-5). Many other businesses, such as local stables, dairies, and poultry operations sell manure for use as a fertilizer or soil amendment.

- o Mixed Paper - Over the next few years, the recovery of mixed paper will be one of the most impacted by price fluctuations. During 1982, only 852 tons of paper were reported recycled, accounting for only 0.7 percent of the total amount of materials recycled in the County. When prices for mixed paper decreased from 20 to 8 dollars a ton, many small volume recyclers, including some cities (San Buenaventura and Fillmore), temporarily discontinued mixed paper recycling programs. Many mixed paper recycling programs that have been discontinued will probably be resumed when prices increase (Tables V-1, V-2, and Figure V-3).
- o Aluminum - Although aluminum only accounted for 676 tons (0.05 of a percent) of the total materials reported as recycled by weight, it is a popular item for recycling because of its relatively high, but stable, price (approximately 1 cent per can). All but a few specialized commercial recyclers recycle aluminum. Ralph's supermarkets (Simi Valley and Moorpark locations), in conjunction with Reynolds Aluminum Corporation, operate satellite aluminum buy back centers. These two buy back operations accounted for 160.8 tons of aluminum cans recycled in 1982. Reynolds Aluminum Corporation, reported paying approximately \$72,989 to aluminum recycling customers at these satellite centers last year (1982) (Reference V-10). The market for aluminum is projected to remain fairly stable over the next few years. This can be seen in the stabilization of aluminum prices in mid-1982, at about 18-32 cents a pound (Table V-1, Figure V-3).
- o Computer Paper - An estimated 307 tons or 0.25 percent of computer "printout" paper was reported recycled by the major recyclers during 1982. The increase in computer usage in the county, should cause an increase in the tonnage of computer paper over the next 3-5 years (Table V-1, Figure V-3).
- o Glass - In 1982, 150 tons of glass was reported recycled. This accounted for only about 0.12 of a percent, or 1/8 of a percent, of the total materials recycled. Two donation centers and two commercial recyclers report glass as one of the materials accepted by them for recycling in 1982. In the past, glass has been a minor portion of the market considering the overall materials recovery market. The major problem with glass recycling is that the closest glass smelting operation using reclaimed glass, is located near Saugus in Los Angeles County, which is a long haul distance for Ventura County recyclers. Another important consideration is price. Traditionally, separated glass (separated by color) has demanded a higher price than mixed glass but it is difficult to have people separate it, due to large fluctuations in market demand (Table V-1, Figure V-3).

In 1980-1981, glass prices remained relatively stable, at around \$32-35 a ton. Recently, near the end of 1982, glass has increased in price to about \$40 a ton for separated glass. With the continued upward movement in prices, recycling of glass will probably remain in a slightly upward trend over the next 3 to 5 years.

- o Tires - Approximately 84 tons of tires were reported as being recycled, mainly by the VRSD and the DPDO at Port Hueneme. Recycled tires account for approximately 0.07 of a percent of the total amount of materials recycled in Ventura County. These tires are regrooved by

used tire manufacturers and, with the current economic recession, there is a greater demand for recycled tires. three years. For a long period of time, recycled tires were selling for \$11-12 a ton in Ventura County. However, the price increased to around \$20 a ton in 1982. If the recession continues, there will be a higher demand for recycled tires. (Table V-1, Figure V-3).

- o White Office Paper - It is estimated from the 1982 survey conducted by staff, that approximately 13 tons, or only 0.01 of a percent of the total amount of materials reported recycled in Ventura County, is white office paper. The small amount of recycled white office paper can be attributed to many factors. One of the most significant is the decrease in participation in white office paper recycling programs due to lack of demand, or large price fluctuations which slowed the demand for this material. The market indicates that a major downward trend in prices (\$58 to \$35 a ton) was probably the major reason in the reduction of white office paper recycling efforts. The decrease in white office paper recycling appears to be only temporary. If the market demand increases and use of recycled office paper increases, then more of this material would be recycled in the county (Table V-1, Figure V-3).
- o Plastic - The Boys' and Girls' Club in Camarillo, recycled one ton per month of plastic in 1982. Plastic only accounts for an estimated 0.01 percent (by weight) of all materials recycled in the county. Most of the plastic recycled was in the form of polyethylene milk and soft drink containers. A major problem related to polyethylene containers is that they do not compact readily and, therefore, require additional space in landfills. These containers, for the most part, are shredded and used in the manufacture of items such as plastic pipe and are sold to manufacturers in Korea and Taiwan. Although plastic prices remain stable, plastic recycling is not well known. Potential recyclers (i.e., homeowners) should be encouraged to recycle plastic items and be educated as to the potential recycling capabilities of plastics (Table V-2, Figure V-3).

A major drawback when considering plastic recycling, is that the Food and Drug Administration sets specific limits on the amount of used plastics that can be used in the manufacturing of plastic pipe. This is an important limiting factor, considering the high volumes of plastics used in pipes throughout Southern California. Another drawback is that most U.S. manufacturers are not currently able to handle recycled plastics in their processes. Despite these drawbacks, it is projected that plastic recycling will increase slightly in Ventura County as more donation and buy back centers accept this material. A more significant volume of plastics could be recovered through curbside recycling. This material has the potential for large increases in tonnage recycled in the county.

- o Mixed Metals - A total of 11,916 tons of mixed metals, which include both ferrous and non-ferrous metals (except aluminum), were reported recycled for the 1982 survey. This accounted for an estimated 9.8 percent of the total materials recycled in the county. Due to the drastic reduction in demand for mixed metals, prices at county buy back centers dropped sharply. One metals recycler went out of business in 1982. As an example of the drastic price decrease in metals, a pound

of brass decreased from approximately 40 cents to 20 cents. The depressed market for mixed metals in 1982 was partially attributable to the depressed auto industry.

- o Oil - Recycled oil accounted for 14,200 gallons or approximately 9.8 percent of the total materials (by weight) reported recycled in Ventura County. Recycled oil from Ventura County is sent to one of two reprocessors, Lakewood Oil Co. in Los Angeles or COE's Oil Reprocessing Company in Ventura. In Ventura County, oil is accepted for recycling by the Boys' and Girls' Club of Camarillo and by the VRSD buy back center at the Santa Clara Landfill. DPDO at Port Hueneme recycles oil from Navy vehicles. The cities of Oxnard and Simi Valley also recycle oil (Tables V-1,2 and Figure V-3).

In the past, oil was recycled on a voluntary basis without payment throughout the county. In the last few years, oil prices have dropped to 18 cents a gallon and is purchased at the VRSD buy back center. When oil becomes scarce again, such as it did during the 1978 oil crisis, the demand for reprocessed oil will again be expected to rise.

- o Miscellaneous Items - Many small volume materials are currently being recycled in Ventura County. VRSD is recycling 200 mattresses a month and receiving approximately \$1.50 per mattress. The mattress stuffing, which is mainly cotton, is used to produce reprocessed mattresses locally. Also, many automobile repair shops and gas stations salvage batteries for their metal content. VRSD is also stockpiling automobile tires for eventual retreading. Today, nearly one-fifth of all tires produced in the United States are retreaded. If all tires were retreaded once, the demand for synthetic rubber would be cut by about one-third, tire disposal problems would be cut significantly and substantial energy savings would be realized.

5.3 EVALUATION OF CURRENT RESOURCE RECOVERY TECHNOLOGY

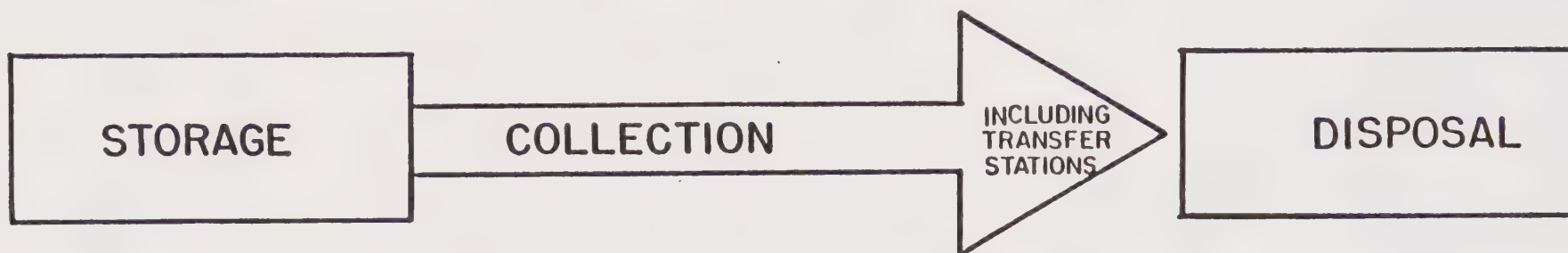
The following describes and evaluates resource recovery options available for possible implementation in Ventura County (References V-11, 12). Recycling and recovery options, compared to existing waste disposal, are shown on Figure V-4.

A. Waste Reduction

Waste reduction is the elimination of waste at its source, by redesign of products, by changing societal patterns of production and consumption of goods and/or by reusing a "waste" material on site. Waste reduction in Ventura County could be accomplished through either consumer education or, to a greater degree, legislation to affect production and consumption practices. Waste reduction is the most efficient of the various resource recovery strategies available.

Packaging accounts for thirty to forty percent of the solid waste stream and represents one of the fastest growing material-using sectors in the economy. In addition, packaging in many cases, accounts for the major portion of the price of consumer goods. Thus, successful legislative efforts to reduce packaging would reduce wastes considerably. Providing economic incentives such as deposits on products, has proven to be an expeditious way of changing societal patterns of production and consumption in several states.

Figure V-4
 RECYCLING & RECOVERY OPTIONS - COMPARED TO EXISTING
 WASTE DISPOSAL



RECYCLING/RESOURCE RECOVERY OPTIONS

- | | | |
|---|--|--|
| — HOME COMPOSTING | — INDIVIDUAL DELIVERY TO RECYCLING CENTERS | — RECYCLE OPERATIONS AT DISPOSAL SITES |
| — SOURCE SEPARATION FOR COLLECTION
I.e. INDIVIDUALS, LARGE ORGANIZATIONS | — PRIVATE GROUP COLLECTIONS
(PAPER DRIVES, ETC.) | — RECYCLE CENTERS |
| — ON-SITE REUSE | — ORGANIZED PUBLIC OR PRIVATE
COLLECTION SERVICE. (ASSUMING
HIGH END OF SOURCE SEPARATION) | — ENERGY CO-GENERATION
FACILITIES |
| | — LOCAL COLLECTION STATIONS FOR
RECYCLABLES | — METHANE RECOVERY AT
CLOSED SITES |

B. Source Separation (Curbside Recycling, Drop-off and Buy Back Centers)

Source separation involves consumers' separation of usable materials before they enter the waste stream. Usually, this is achieved at the home or workplace. Because individual participation is implicit with this approach to material recovery, recycling efforts are more labor intensive than capital intensive. Successful programs require widespread community support. Paper, glass, metals, used oil, scrap wood, and used clothing are currently being received at the eighteen recycling centers throughout Ventura County. The materials arrive at the centers either by recycling workers (i.e., boy scout paper drives) who collect from households, or by individual consumers supplying their own separated loads. An optimum recycling program has the potential of diverting up to twenty percent of the residential and commercial waste stream in Ventura County which would save a significant amount of landfill space.

There are three points of collection for source separated goods; 1) curbside recycling, 2) drop-off centers, and 3) buy back centers.

1. Curbside Recycling

a) Overview

Curbside recycling involves individual separation of recyclable materials at the point of generation (the home or business), before it enters the waste stream. Of the three primary methods of collecting recyclables - curbside, drop-off centers, and buy-back centers, curbside collection programs are considered the most effective, in that they achieve the highest diversion rates, normally 10-15%. The high recovery rates are attributed to the convenience which curbside collection affords. In 1981, the Environmental Protection Agency (EPA) estimated there were 300 curbside programs in operation, 178 collecting newspaper only, and the remainder multi material programs. Curbside collection programs are concentrated in California and the northeastern U.S. Curbside recycling in California is increasing. There are currently 25 California communities (9 managed by municipalities) with multi-material curbside recycling operations, collecting approximately 634,000 tons of newsprints, 70,000 tons of aluminum and 104,000 tons of glass. California recycles more than 65 percent of its aluminum cans, compared to slightly more than half of those produced on a nationwide basis.

b) Experience of Other California Communities

Program Highlights

A survey was conducted in September 1984 of curbside collection systems in practice or planned in selected California counties (Table V-4).

The majority of curbside collection systems surveyed are operated on a City-wide basis, primarily involving small cities of under 50,000 population. The smallest system surveyed served 2,000 homes. One county, San Luis Obispo, has a countywide curbside recycling program.

TABL -4
SURVEY OF CURBSIDE RECYCLING PROGRAMS

LOCATION	SYSTEM	RESIDENCES SERVED	PARTICIPATION RATE	TYPES AND AMOUNTS OF WASTES RECYCLED (ANNUAL)	ECONOMICS	HISTORY & STATUS
City of Solana Beach	Curbside collection by private volunteer group	2,000 homes	25% ($\pm 10\%$)	o Newspapers: 365 tons o Glass: 100-175 tons o Aluminum: 7 tons	Volunteer Labor	Initiated 1983 w/1,000 homes. Expansion planned to save 8,000 dwellings (total).
San Luis Obispo County	Joint system operated by private garbage hauler; recyclables are collected along with refuse.	35,000 pop. served	50% \pm	o Newspaper o Glass o Aluminum	Close to breakeven - sometimes in red	Began in 1977 w/EPA grant providing fund- ing 1st 6 mos. Part of integrat- ed system with buyback and drop- off centers.
City of Palo Alto	Curbside Collection by City Sanitation Department	15,500 SFD's	65%	Newspaper, Glass 5,500 tons	1983 Total Revenues: Expenses = 231,540	Curbside program began in 1980; City plans to expand program

TABLE V-4 (Con't.)

LOCATION	SYSTEM	RESIDENCES SERVED	PARTICIPATION RATE	TYPES AND AMOUNTS OF WASTES RECYCLED (ANNUAL)	ECONIMOCs	HISTORY & STATUS
City of Santa Monica	Joint system operated by private garbage hauler; recycl- ables are collected with refuse	Also serves some bars & restaurants	35% (99% of all homes and 28% of apartments)	<ul style="list-style-type: none"> o Newspaper: 839 tons o Glass: 450 tons o Aluminum Cans: 12 tons o Steel Cans: 60 tons o Used Motor Oil: 643 gals. <hr/> = 1,361 T's total (1983)	At least breaks even	Only system to serve some multiple family units
City of El Cerrito	Curbside collection by City staff	43,000 (primarily single-family homes)	50%	6,000 tons	Requires subsidy but cost per ton is less than landfill cost	Organized in 1972 by volunteers; became City program in 1977. Aiming to be self-sustaining. Part of integrated system of buyback and drop-off centers

Source: Ventura County Planning Division; telephone survey September 1984

Participation in those curbside recycling programs surveyed ranged between 35- and 65% of the population. The primary items recycled were newspaper, glass, and aluminum.

Economically, curbside collection programs were generally found to operate close to, or slightly below, the breakeven point. In many cases, fees collected from regular refuse collection, in part, subsidize the curbside program. There are several examples in which curbside programs have been very successful economically including: Davis Waste Removal, a private waste hauler serving the 38,000 residents of Davis, which was the first, and now most successful, program in California; Solana Beach Recyclers, a private firm which began with volunteers and continues to expand to surrounding communities; Palo Alto, which boasts a 65% participation rate and netted \$45,000 last year; and El Cerrito which diverts 25% of wastes ordinarily destined for landfills and which is expected soon to be self-sustaining. The cities of Fresno and Santa Rosa also have successful (self-sustaining) curbside recycling programs. Many programs were initially subsidized, such as Santa Monica's Department of General Services, which received a \$263,000 grant from the California Waste Management Board. Additional economic benefits from recycling accrue to the participating jurisdiction because recycled wastes are diverted from the wastestream, thus conserving landfill space and decreasing long-term land disposal costs.

Scavenging, conflicts with charitable organizations, and conflicts with existing recycling businesses were cited as problems in some localities. Scavenging, (stealing the more valuable materials left at curbside) is considered an occasional problem in Los Angeles County. It is not considered a problem in other areas such as San Luis Obispo. Conflicts with programs of non-profit organizations was identified initially as a problem in Palo Alto, however, the problem was soon resolved. Conflicts may also occur with existing recycling business, however in the cases surveyed those businesses appeared to be a part of the overall program, thus avoiding such conflicts.

c) Implications for Ventura County

The most significant benefit of curbside recycling in Ventura County is that such a program could extend the life of existing landfills, thereby reducing the future cost of solid waste management. If economic conditions are favorable, recycling can also help reduce the costs of garbage collection and disposal through providing a source of revenue. Curbside recycling does not require high capital investment and can be implemented within a relatively short time frame.

2. Drop-off Centers

A drop-off center is a centrally located depository where individuals may leave recyclable materials. A drop-off center's size and structure are dependent on the number and type of recyclable materials to be processed. While volume determines the amount of storage and collection space required, a minimum building size of 1500 square feet is advised. Drop-off centers usually run on a no-purchase basis;

individuals do not receive money for items brought to the drop-off center. Ventura County had seven drop-off centers in 1982.

Among the advantages of drop-off centers, the center may be sized according to the quantity of incoming materials and need not require a large capital investment. Since transportation is provided by individuals, there is an inconvenience for those living far from the site. In addition, the "no-purchase" mode of operation may not offer sufficient motivation for many people to recycle materials.

Fresno County began a drop off program in 1982 to reduce waste going to their regional landfill. The County is responsible for marketing, administration and education, and the cities and volunteer groups assume operation of the center. A \$100,000 state grant funded capital improvements at the center. The center also receives materials collected through the County's recently instituted curbside program.

Some cities such as Fairbanks, Alaska have tried some unique approaches in the establishment of satellite donation drop-off centers located at local shopping centers. This requires close coordination with shopping center managers, store owners and local government to make this a useful and profitable venture. This approach could be considered in Ventura County (Reference V-3).

3. Buy Back Centers

Buy back centers are essentially drop-off centers which operate on a purchase basis. Buy back centers pay the public for recyclable materials and then sell them to a material user or processor. Buy back centers usually purchase recyclable materials of high value such as aluminum, other metals, paper, and glass but may also accept less profitable items such as used motor oil. Naturally, market conditions in the area will determine what materials may be handled on a purchase basis. Buy back centers are often positive incentives for public involvement in recycling and have worked successfully for many years in Ventura County, where eleven buy back centers operate currently.

C. Site Separation (Hand and Mechanical Sorting)

Site separation is material recovery at the disposal site, transfer station, or solid waste facility either by hand sorting or mechanical separation. Hand sorting has been used extensively in the past, where limited amounts of recyclable material were segregated from limited volumes of refuse. Other than on a very limited basis (mattresses) site separation methods are not employed in the County.

Mechanical separation methods are capable of segregating solid waste into valuable components and are aimed at minimizing the level of impurities in recovered products, in order that the highest dollar value may be obtained. These recovery processes are made up of a variety of operational steps which include sorting, shredding, air classification, wet and dry pulping, magnetic separation, density/gravity separation, and optical sorting. Recovered products include paper, glass, ferrous and non-ferrous metals, paper fibers, and textiles. One highly successful method operating in Europe is called the Seerdum Trommel (Reference V-14).

A landfill in Wicomico County, Maryland has had a Seerdrum system in operation for almost two years and it has been quite successful. Processing 110 tons of refuse a day, they report a 68% volume reduction in landfill requirements which extended the useful life of a landfill to thirty or forty years. The simple technology of the required equipment has resulted in low maintenance costs; reportedly three or four cents per ton of waste processed. The maintenance costs include three service conveyors necessary to feed the drum and carry the reject and product flows to trucks for transport to the landfill.

D. Composting

Composting is the aerobic decomposition of organic materials and can be successfully implemented on either a small scale, such as in-home gardens, or as a large scale commercial operation. There are two basic types of commercial composting: mechanical high-rate digestion, and open windrow methods. The mechanical high-rate digestion method operates in specifically designed structures with controlled temperatures and controlled airflow rates. Composting time can be as short as a few hours according to manufacturers. [The efficiency of such a short digestion time is questioned as well as the destruction of pathogenic organisms which occur in the open window method of composting].

The open window-type composting consists of placing the prepared refuse on the ground, in mounds or in trenches (windrows). Windrows will vary in dimension according to equipment used, amount of refuse to be composted, and land area available.

A combination of these two basic composting methods types have also been successfully employed, such as utilizing windrows with forced air circulation in an environmentally controlled building.

Composted solid waste material is used as a soil amendment to increase crop production, to limit erosion rates, and to make other improvements in soil characteristics. Use of compost as fuel has been successfully demonstrated with manures and crop residues. When composted or digested, these materials will produce flammable gases and heat which can be recovered and utilized.

Most solid waste derived composts do not contain adequate amounts of nitrogen or phosphates to be strictly classified as a fertilizer, hence the term "amendment" is used.

Composted refuse has proven technically feasible for many years, particularly in Europe. The lack of success in the United States is primarily the result of limited markets for the product and relatively high cost.

Ventura County has two commercial composting operations. One is located at the Camarillo Oaks Sanitation Plant, and the other is operated by Castle and Cooke Foods in Camarillo. The sanitation plant uses a combination composting method consisting of a digester and sludge drying beds. Approximately 964 tons are produced and sold annually (for the nominal fee of one dollar) as a soil amendment to a local sod farm. Since this operation is not economical, the benefit to the plant is the avoidance of transporting and disposing of the material at a landfill. The demand for mushroom compost from Castle and Cooke Foods has caused a 100% increase in compost sales since 1975.

The prime advantage of composting is that it may have the potential to reduce the quantity of solid waste going into traditional landfills by sixty to seventy percent, with a weight reduction of twenty to thirty percent as some existing systems have experienced. In addition, the process offers other important benefits, including: recovery of valuable metals, multiple siting options are available, and no apparent environmental associated problems.

A small 200 tons per day plant costs are estimated at \$12-15 million. Therefore, the Western Wasteshed, which disposed of 1,800 tons of waste per day in 1983, would require approximately 9 such plants. It would cost at least \$20-25 per ton for use of the plant, as compared to the current landfill disposal cost of \$5.90-\$6.30 per ton for refuse, and \$10 per ton for undigested sewage sludge. No known market exists for the compost at this time. This plus relatively high cost complicates reliance on composting today.

E. ENERGY GENERATION

1. Landfill Gas Production

Anaerobic digestion (also known as methane gas recovery or bio-conversion), is the process by which organic materials such as the major fraction of municipal solid waste (MSW), break down into carbon dioxide, methane, and water by bacteria which live in an oxygen free environment. This process may occur naturally, especially in deep landfills, and may be tapped to provide energy.

a) Location of Existing Landfill Gas Systems (LFG):

In 1980, there were 8 landfill gas (LFG) projects operating in the U.S. (See Table). The first LFG project was initiated at the Palos Verdes Landfill. The largest plant, a second generation facility based upon knowledge gained at Palos Verdes, is in Monterey Park. Both of these plants produce pipeline quality gas for use by Southern California Edison. Currently, a LFG project is underway in Ventura County at the Santa Clara Landfill.

b) Santa Clara Landfill:

Cambrian Energy Systems has developed an LFG project at the Santa Clara Landfill in Oxnard, which is expected to begin operation by November 1984 (all facilities and the collection system are currently in place). The plant will be owned and operated by Cambrian, and the City of Oxnard, who owns the land and will receive royalties. Of the two LFG process technologies available - electricity production and gas production, the Santa Clara Plant will produce electricity.

c) Cost Data:

Most LFG plants have been operating at close to the breakeven point. As the technology develops, these plants are becoming more profitable, which accounts for the growing interest in these projects by the private sector. According to Cambrian, royalties to City/County government range between 10 and 20% of total revenues. In general, there is a trend toward electricity - producing LFG plants wherein the landfill gas is used to run electric motors, because of existing regulations favoring electricity production. For example, PURPA requires electric utilities to buy power from independent producers at the established rate, while no such requirements apply to landfill gas. In addition, in California, because of stringent air quality regulations, it is costly to scrub landfill gas to meet standards. Electric generation (incinerators) of LFG on the other hand does not produce air pollutants, only CO₂ and H₂O as by-products.

d) Feasibility at Future Ventura County Landfill:

From a preliminary analysis, LFG appears very promising for the following reasons:

1. Plants have been operating successfully, except for minor problems which are being resolved as technology develops.
 2. Several new plans are planned in California, and one in Ventura County.
 3. Private firms are often willing to assume the financial risk of developing such a facility.
 4. No guarantee by County of waste volume is required.
 5. This type of facility would reduce impacts due to safety hazards, air pollution, odors, and subsidence, thereby reducing overall environmental impacts.
 6. Mitigation of gas migration simplifies future use of the site for golf courses, park, etc.
2. Waste Material Processing (Refuse Derived Fuel or RDF)

Waste material processing is a fuel derived from refuse or municipal solid waste. RDF, as it is commonly called, is waste which is processed to various extents. The five common RDF's are: raw RDF, coarse fluff RDF, densified RDF, physically powdered RDF, chemically powdered RDF.

Heating values increase as the RDF process becomes more complex; with raw RDF offering the lowest British Thermal Unit (BTU) content and chemically powdered RDF offering the highest BTU content. RDF manufacturing costs increase with process complexity as well. Cost estimates for a 1,000 ton/day RDF system range from \$100,000-\$14 million. At this time, Ventura County does not have any facilities

processing waste material into RDF. High front-end costs, air pollution control requirements and limited marketability of the end product, may preclude this as a viable option for the County at this time.

RDF can be a waste processing facility in itself but has proven more successful as a prelude to waste to energy or combustion systems due to a wider marketability of the end products of those systems (i.e., hot water, steam, and electricity).

3. Modular Incineration (Mass Burning)

Modular incineration is a combustion system which consumes or mass burns MSW as a fuel and produces energy such as steam, hot water, gas, and/or electricity. Basically, MSW is received, presorted to remove non-combustible items, and then shredded to reduce the particle size and increase the surface area for combustion. This is then fed through two incineration cycles to obtain complete combustion. The hot effluent then passes through a boiler which produces steam. The steam may be delivered directly to users, or used to turn turbines and produce electricity, or both.

Auxiliary fuel is required for system start-up and may also be required to maintain proper combustion temperatures. Ash resulting from incineration is required by California State law to be deposited in a Class I landfill. Past cost estimates for a 180 ton/day plant range from \$4-\$5 million.

Presently, no agency in Ventura County has a modular incineration system on line. However, if the financing could be secured, and air pollution control requirements met, a modular incineration system producing a universal end product such as electricity, would not be difficult to market providing a continuous supply could be assured. Material recovery could be employed in the front-end of this process to recapture reusable items such as metals and glass, and would also increase the net heating value of the refuse, making this system more economical.

4. Waterwall Combustion (Mass Burning)

A waterwall combustion system employs mass burning of MSW in a specially designed furnace which is lined or jacketed with water filled tubular grates. These water filled grates recover heat as steam or hot water for direct use or conversion to electricity. Depending on the type of waterwall combustion system utilized, unprocessed MSW or any type of RDF may be used as fuel. Air pollution control equipment must be applied and ash residue from the incinerator may be required to be disposed of at a Class I landfill. Cost estimates for a waterwall combustion plant with a capacity of 50 tons/day range from \$1-2 million.

There are a number of regulatory uncertainties, the foremost relating to air quality, which are associated with waterwall combustion, and which need to be resolved before this technology can gain wider

acceptance. Ventura County has a good potential to market the electricity produced by such a project, due to the ease of transporting and universal use of this energy form.

5. Pyrolysis

Pyrolysis is the process by which organic materials are completely broken down by heat into a combustible gas, a liquid containing a longer chain hydrocarbon, and a solid chain which is almost pure carbon plus inorganics such as metals, glass, etc. The quantity and quality of the resultant gas or oil is highly dependant upon the design and operational conditions of the pyrolysis system. The required heat may be applied by partially combusting or indirectly heating the raw material. Pure oxygen is used as the combustion source, rather than air, to produce a medium heating value gas. The cost of a 200 ton/day pyrolysis plant is approximately \$15 million.

Pilot and full-scale pyrolysis units have been constructed in several parts of the United States, but have not met with much success. Further development of pyrolysis technology is necessary before it can be considered a viable resource recovery technology.

6. Cogeneration

Cogeneration is a combination of energy recovery processes used to produce two or more end products such as steam and methane. Cogeneration may be defined as the production and use of two forms of energy (i.e., steam, electricity) from a single fuel source. Prior to processing in a waste to energy facility, combustible refuse must be separated from non-combustible. Separation may occur either at a landfill or transfer station or at the facility itself.

Historically, waste to energy projects in the U.S. have experienced technical problems, which has limited its development. More recently, however, the decrease of landfill space and enactment of more stringent landfill siting criteria have provided the impetus for further refinement of waste to energy technology and has led to numerous proposals in California. "Waste to Energy," as the phrase implies, is a process which utilizes the resultant energy to provide power to a facility on-site. The most common type of waste to energy process burns refuse at very high temperatures to produce steam or to turn turbines to produce electricity. Over 200 of these plants are currently operating in Europe. This process produces approximately 20-25% ash as a by-product.

a) Oxnard Project

A cogeneration facility for Ventura County proposed by CMI Encom would have utilized a relatively clean process to digest waste and produce methane without any residue, except sewage sludge. This facility was to have processed approximately 500 tons/day of refuse and approximately 1,000 gal/day of sewage sludge provided by VRSD, with the resultant energy sold to Southern California Edison to

power their Ormond Beach Electric Plant. The sludge and refuse was to have been anaerobically digested to produce methane gas, with the resulting residue incinerated, and the steam produced also sold to SCE for electrical generation.

It was estimated that this facility would provide 530 KWH of electricity and cost approximately \$42 million. The CMI proposal is no longer active because the parent company has experienced financial problems. SCE as well as VRSD remain very interested in establishing a facility at Ormond Beach.

b) Small-Scale Facilities

Small cogeneration facilities are also feasible if they have access to high quality feedstocks (wastes having high fuel values). One such facility is currently under consideration by Camarillo State Hospital.

The County Government Center, which produces a large quantity of paper waste (although a portion is recycled) may provide another opportunity for a small scale cogeneration facility.

c) Timing and Status

It takes between three to five years to have a large waste to energy facility on-line. For a small facility, a project could be on-line within one year. VRSD has indicated they are involved in discussions with companies interested in pursuing a large waste to energy project as well as firms interested in small-scale projects. The District has recently completed a waste characterization study which will help determine the optimum size and type of facilities which should be developed.

d) Survey Findings

A survey of 12 counties was recently conducted (September, 1984) to determine the status of waste to energy proposals in California (Table V-5). Nearly every County surveyed had at least one plant proposed. The majority of projects are in the proposal and permitting stages, while the remainder are in the conceptual stage. Most of the projects are planned to be developed and operated by private firms. None are presently operational.

e) United States Conference of Mayors Study

The City of Oxnard was one of six cities nationwide chosen to receive technical assistance in evaluating feasibility of waste-to-energy projects in their area. Funded by the United States Department of Housing and Urban Development, a study team evaluated economic, environmental, and regulatory constraints and benefits for possible waste-to-energy projects in Ventura County.

The results of this study indicate that either a large waste-to-energy plant or a small-scale cogeneration plant would be technically feasible, providing air quality concerns can be resolved with regard to a large mass burn plant and a market can be confirmed. Cost remains the major constraint.

T E V-5
SELECTED SURVEY OF WASTE TO ENERGY (W-E)
PROPOSALS IN CALIFORNIA

COUNTY

STATUS

1. LOS ANGELES COUNTY
 - 4 major facilities are proposed: Long Beach Facility (600 TPD); City of Commerce Facility (300 TPD); South Gate Facility (2,000 to 10,000 TPD); Puente Hills Facility (2,000 to 10,000 TPD).
 - Several minor facilities are also proposed.
2. RIVERSIDE COUNTY

Request for Qualifications (RFQ) released by County for proposals to construct a 1,200 TPD facility to serve the northwest portion of the County.
3. SAN BERNARDINO COUNTY

The County recently received bids on W-E plant. A joint San Bernardino/Riverside County plant is under consideration.
4. ORANGE COUNTY

County is supportive of cooperative county/private venture, viable proposals are being sought.
5. ALAMEDA COUNTY

200 TPD facility approved. It is currently on hold awaiting financing.
6. SAN FRANCISCO CITY/COUNTY

None proposed. Currently transports all refuse to Alameda County; therefore, may utilize a W-E facility there should one be considered.
7. SAN DIEGO COUNTY

Four projects under consideration, two of which are proposed for Oceanside and Chula Vista, the other two, considered most viable, are:

 - a) SANDER (San Diego Energy Recovery Project) - 2250 TPD, a joint city/county project proposed at the Miramar landfill site.

b) 1200 TPD project proposed by SCA Thermal Electron, proposed at the San Marcos Landfill site.

- | | |
|----------------------------------|--|
| 8. <u>SANTA BARBARA COUNTY</u> | W-E Facility proposed at Tijiguas - conceptual stage. |
| 9. <u>SAN LUIS OBISPO COUNTY</u> | NONE PROPOSED. |
| 10. <u>KERN COUNTY</u> | Two projects in preliminary stages: Jenstar at China Grade; Cambrian at Bakersfield |
| 11. <u>IMPERIAL COUNTY</u> | NONE PROPOSED. |
| 12. <u>FRESNO COUNTY</u> | Two W-E facilities planned. Contracts are being negotiated for facilities at yet to be designated new regional landfill site, and at existing Southeast Regional Landfill. |

Source: Ventura County Planning Division Telephone Survey, September 1984

5.4 EVALUATION OF POTENTIAL FOR EXPANDED RESOURCE RECOVERY

A. Financing Options for Resource Recovery Projects

Without adequate financing, resource recovery projects cannot be successfully implemented. The cost of financing is often a limiting factor and can add significantly to the overall cost of implementation (Reference V-15).

There are several avenues available to secure financing for resource recovery projects, which include:

- o Bank or Loan Company - Bank or loan companies can provide funds for developing resource recovery projects through conventional loans.
- o Bond Financing - Municipalities can sell bonds to obtain funds for developing resource recovery facilities.
- o Financing Firms/Investment Companies - Financing firms and investment companies can provide assistance in obtaining funds for developing resource recovery facility projects. They may also fund projects directly.
- o Third Party Financing - Private or third parties may be interested in investing in resource recovery facility projects through leasing or participatory agreements. Since they usually do not own manufacturing processes, they may not need to obtain pollution control offsets. It's possible to acquire no interest loans and split dollars saved through energy savings with the facility owner.
- o Utility Funding Program - SCE and Southern California Gas Company both have programs which offer to match funds, up to a certain amount, with resource recovery facilities in the utilities' service areas.

The California Pollution Control Financing Authority - Tax exempt revenue bonds are available to finance the installation of private "renewable energy resource devices" that produce electricity without using fossil fuel or nuclear fuel.

The California Alternative Energy Source Financing Authority (CAESFA) - Two hundred million dollars in low-interest, tax free bonds are available from CAESFA to assist in developing private cogeneration and other alternative or renewable sources of energy. The projects funded must be ready to build and bonds are issued against the credit of the participating company. Debt service guarantees may be provided for smaller projects.

Financial Feasibility Computer Model - Pacific Gas and Electric Company has funded the development of a computer model which performs a life-cycle cost analysis of a cogeneration project to determine its financial feasibility. The computer model is currently available through an independent computer firm. The California Energy Commission hopes to have a similar financial computer model available throughout California soon.

Bioconversion Demonstration Program - The California Energy Commission has funds available to disburse in a purchase/buyback agreement for up to fifty percent of the total project construction costs. Participants' cost could include the feasibility study and the engineering design work costs. These funds are available for biomass or waste-fueled cogeneration projects. Proposed projects must have an adequate fuel supply and be of reasonable cost.

Several governmental agencies are also in the process of making funds available or indirectly promoting resource recovery facilities. These agencies are the 1) Department of Energy, 2) Environmental Protection Agency, 3) Department of Commerce, and 4) Congress.

- o Department of Energy (DOE) - Presently, DOE's Urban Waste Technology Program has limited authority to use loan guarantees, cooperative agreements, contracts, price supports, and grants to support commercial demonstration efforts utilizing solid waste for energy production.
- o Environmental Protection Agency (EPA) - The EPA has funding available to urban areas for comprehensive planning efforts of resource recovery facilities. The EPA has to date awarded financial assistance to sixty-six communities. These funds may be used to support feasibility analysis, development of a procurement strategy and the solicitation and selection of contractors to design and construct facilities. According to EPA, fully successful commercialization of these communities' projects could save almost six million barrels of oil each year, resulting in an increase in energy recovery from solid waste in the United State from the current two percent to almost nine percent of the waste stream.

In addition, EPA seeks to promote efforts at the state and local level to encourage resource recovery facilities through its Technical Assistance Panels Program. This program provides staff and consultant expertise to help these agencies solve their resource recovery problems.

EPA encourages resource recovery efforts at the state level through the Resource Conservation and Recovery Act (RCRA) which has funding available for all areas of solid waste managment, including resource recovery projects.

- o Department of Commerce (DOC) - The Solid Waste Disposal Act is the principal federal law authorizing the DOC's role in promoting resource recovery facility projects. This law directs the Secretary of Commerce to locate and stimulate markets for recovered resources, encourage commercialization of resource recovery facilities using proven technologies, and obtain and exchange economic and technical data relating to resource recovery projects.
- o Congress - Congress has sought to promote the innovation of resource recovery projects, especially waste to energy projects, through several legislative initiatives other than RCRA.

Public Law 95-238 (Title IV), establishes a financial support program for solid waste reprocessing demonstration facilities that would produce fuel and energy intensive products by authorizing grants, contracts, price supports, and cooperative agreements, and loan guarantees. The law specifies that the federal share for a waste to energy facility shall not exceed seventy-five percent of the cost.

Public Law 96-126 creates a special fund designated the "Energy Security Reserve." Congress has appropriated \$19 billion to this fund "to expedite the domestic development and production of alternative fuels, and to reduce dependence on foreign supplies of energy resources." Alternative fuels are defined as "gaseous, liquid, or solid fuels and chemical feedstocks derived from solid wastes, coal, shale, tar sands, lignite, peat, biomass, unconventional natural gas, and other minerals or organic materials other than crude oil or any derivative thereof."

This law also provides that tax exempt Industrial Development Bonds (IDB's) may be used to finance certain facilities which are primarily used to convert solid waste into alcohol. This legislation also provides for accelerated research development and demonstration programs to advance resource recovery technologies and to reduce the economic and technical constraints.

B. Constraints in Developing Resource Recovery Systems

1. Material Recovery/Conservation Project Constraints

As a general rule, the growth of a recycling program is limited by demand rather than supply. The first activity of the County's recycling program is to determine and locate the area's available markets for recyclable materials. A program may then be planned according to what materials those markets will and will not buy. In other words, the market situation will determine how to tailor a resource recovery/recycling program to Ventura County's needs.

Securing markets for processed material is complicated by the unique nature of many recycled materials. Because of their dependence on the wider economy, recovered resource markets in the County are volatile; a gentle ripple in the national economy may trigger severe waves through the recycling marketplace, forcing buyers to purchase only what they are confident they can sell.

a. Market Constraints

Major market constraints in developing resource recovery systems include:

- o Type and location of an area's available markets for recyclable materials
- o Existing condition of the economy
- o The lack of tax incentives for secondary materials use in comparison to the advantages accorded to virgin resource consuming industries.

- o The general slowness of industry to research the economic feasibility of and the development methods for incorporating recyclable materials into plant operations.
- o The apparent disinterest by business, industry, and government to procure products containing reclaimed material.

In summary, developing a viable and stable resource recovery system largely depends on locating markets for materials, contacting the buyer and utilizing innovative market strategies. Without a place to sell materials, recycling programs in the County can become just another way of collecting urban waste. Innovative management of recycled materials can be used to leverage local economic development and develop this resource for Ventura County.

2. Energy Recovery Project Constraints

Numerous public and private organizations are working on approximately thirty-three demonstration and commercial scale energy recovery projects in the State of California. This emerging industry has had its "learning problems" and has faced a variety of constraints including technical, institutional, and economic.

a) Technical Constraints

During the last ten years the energy recovery industry throughout the country has experienced many technical problems in plant operations. Some plants have had a history of frequent breakdowns or have not yet accomplished full capacity in their operations. As a result, most public utilities and private companies are reluctant to depend on this technology as a major fuel source. With a decade of industry experience, many of the recognized shortcomings have been overcome and newly developed plants have proven more reliable. If the energy recovery industry can deliver fuel products or energy on a reliable basis, the demand for this technology will increase substantially. Back-up fuel sources are now provided to insure a continued fuel supply.

b) Institutional Constraints

The demanding process of project implementation of any energy recovery system necessitates the participation of a wide variety of participants including; state, county, and city governments who are faced with growing waste disposal problems; the energy recovery industry, citizens, refuse collection agencies, and companies seeking to purchase recycled materials.

Project participants face many risks and uncertainties such as regulatory problems, legal constraints, and sometimes public opposition to a project. Many governmental regulations which address resource recovery are poorly defined or outdated. Experience to date suggests the average time required to advance an energy recovery project from the concept stage to full-time operation stage averages from six to ten years and sometimes longer. However, it is possible a project can come on line much sooner, within 3-5 years, if no significant problems develop.

Recognizing that cooperation between all participants is essential, Ventura County recently has developed a streamlined permit process for commercial and industrial projects which would facilitate processing of waste to energy projects. This procedure allows for concurrent processing of permits, reducing the costly processing time by approximately one-third.

C. Economic Constraints

Energy recovery plants generally receive income from three sources: 1) the price received for selling the energy product, 2) the price received for recycled materials such as glass, metals and aluminum, and 3) the price received for allowing refuse collectors to dispose wastes at the facility, i.e., a tipping fee. However, many constraints may face the industry which can adversely affect their economic feasibility. Several examples are cited below.

- o A minimum amount of refuse must be available to allow for plant capacity and maximize the economic feasibility of the plant and the resultant fuel and landfill capacity savings.
- o Local taxes may hinder a plant's profits.
- o High front-end costs have made financing difficult for local governments and other interested groups. Often, it is not legally possible for local governments to enter into long term contracts.
- o Potential large markets for refuse derived fuel, such as electric utilities, may not have an economic incentive to use this fuel because of established long-term contracts for conventional fuel types.
- o Local economic conditions such as low disposal costs, may deter the construction of a project.

Economic feasibility can be enhanced when 1) the price of the energy product is lower than the buyer's alternative fuel cost, and 2) the disposal fees paid by the public for dumping the waste at the project are competitive with the cost of other disposal alternatives.

D. Measures To Encourage Resource Recovery Systems

- a) Determine and locate additional available markets for recyclable material and for recovered energy products.
- b) Assure a long-term adequate and reliable supply of waste input.
- c) Continue to streamline the permit process and regulatory controls to allow resource recovery systems to proceed in a timely fashion.
- d) Encourage cooperation among project participants and provide public participation.
- e) Research proficient and proven systems that allow reliable and efficient delivery of energy products and recycled materials.

5.5 RECOMMENDATIONS

A. Short Term (1-5 Years)

1. Provide support of packaging legislation at the State, Federal and/or local levels which will encourage material savings.

Responsible Agencies: Ventura County Planning Division* and Ventura Regional Sanitation District (VRSD)

Estimated Resources Required: Approximately one staff day/month to review, analyze and formally respond to appropriate waste related legislation.

2. Provide education to the public advocating wise consumption and reuse of packaging purchased. Indicate how waste reduction efforts can save materials and natural resources, reduce energy demand, ease environmental problems, and reduce the escalating cost of living in today's industrialized world. An appropriate method of achieving this task would be to establish a public informational newsletter on recycling and resource recovery, or a section on this subject may be established in the current solid waste management newsletter. In addition, work closely with volunteer organizations (i.e. Homeowners' Associations, etc.) to increase resource recovery education.

Responsible Agencies: Ventura County Planning Division* and Ventura Regional Sanitation District (VRSD)

Estimated Resources Required: It is recommended an informational newsletter on recycling and resource recovery be written on a quarterly basis (every three months) and distributed to schools, libraries and any other appropriate locations. This task will require approximately eight to twelve person hours every three months. Approximately ten person hours each month will be required for public presentations.

3. Develop and maintain accurate information on the types and quantities of solid waste generated and disposed of in Ventura County. This information will aid in planning for additional resource recovery facilities. It is recommended that this information be computerized in order to facilitate thorough and timely data analysis.

Responsible Agencies: Ventura County Planning Division* and Ventura Regional Sanitation District (VRSD).

*Indicates the lead agency

Estimated Resources Required: Presently, much of this information is collected by VRSD. Environmental Health currently receives specific data from VRSD on a monthly basis, it is anticipated that one person, working full-time on this task, could set up a CoSWMP Planning Data file system in approximately four to six weeks. Maintenance and upkeep of the files thereafter, would take an estimated five to ten person hours a month. Computerization of this information would greatly enhance data analysis. Costs to accomplish this is undetermined at this time.

4. Identify & track additional potential markets for recovered materials. The National Bureau of Standards, in conjunction with the State Solid Waste Management Board, is surveying the State of California to determine markets for recycled commodities. This is an effort to match recycled material users (buyers) with recycled material centers or collection points (sellers). Ventura County plans to cooperate with these agencies and recommend to local governments to "buy recycled." NBS has offered to work hand-in-hand with governmental purchasing officers. Public information on available recycled material markets will be disseminated and directed to large industries, as well as the general public and local government purchasing departments.

Responsible Agencies: Ventura Regional Sanitation District (VRSD)* and Ventura County Planning Division

Estimated Resources Required: This task will require approximately two to five person days per month, once the State Solid Waste Management Board has completed its survey of available markets for recycled commodities. Duties would encompass identifying and contacting industries and local government purchasing departments, and encouraging procurement of recycled materials within Ventura County. Additional time will be required with the County's Support Services Agency.

5. Assess the need to conduct a Countywide survey to determine where curbside recycling projects could be most successfully established. The survey could establish citizen receptiveness to curbside collection in general, as well as identify under what conditions would those who expressed an interest be willing to participate.

Responsible Agencies: Ventura County Planning Division* and Ventura Regional Sanitation District (VRSD).

Estimated Resources Required: It is estimated that approximately one staff person for two weeks time could develop and distribute this survey. A detailed analysis of the survey would require an additional week.

*Indicates the lead agency.

6. Develop a citizen's guide to recycling in Ventura County. This guide could describe current resource recovery and recycling efforts in Ventura County and provide a listing and a map of all known recycling centers, including items recycled, location and hours of operation.

Responsible Agencies: Ventura Regional Sanitation District (VRSD)* and Ventura County Planning Division

Estimated Resources Required: To develop a citizens guide, newspaper advertising used as a public service should be explored as a means of soliciting citizen input. This task will require one staff person's time for approximately four weeks. An additional one week's time for one person will be needed to distribute this information (i.e. public presentations, development of mailing list). Additional time to update the citizen's guide should be determined as required.

7. Assess the need for and coordinate the establishment of satellite donation or buy back centers at convenient locations, such as local and regional community shopping centers.

Responsible Agencies: Ventura County Planning Division* and Ventura Regional Sanitation District (VRSD).

Estimated Resources Required: This task will require approximately 160 prson hours to develop a feasibility study and coordinate with shopping center managers. An additional 160 person hours would be needed to assist in actually coordinating the establishment of these satellite centers.

8. Continue to evaluate waste-to-energy projects in Ventura County

Responsible Agencies: Ventura Regional Sanitation District*, City of Oxnard, and Ventura County Planning Division.

Estimated Resources Required: Staff requirements will vary depending on the number of projects to be evaluated. Ongoing feasibility assessments will be handled by existing staff of the agencies involved as part of their assigned responsibilities.

9. Establish the need for and where feasible, encourage development of waste to energy projects in the County.

Ongoing feasibility assessments of waste-to-energy projects may identify viable projects. These are to be encouraged wherever practical.

Responsible Agencies: Ventura Regional Sanitation District (VRSD)* and Ventura County Planning Division

Estimated Resources Required: This task will depend on whether a viable project is discovered.

B. Medium Term (5-10 years)

1. Develop an ordinance that would require, as a condition of the CUP, that operators of new waste facilities shall provide plans for resource recovery at the site and consider increasing compaction of landfilled wastes at sites, to maximize site life.

Responsible Agencies: Ventura County Planning Division*, Environmental Health, and Ventura Regional Sanitation District (VRSD).

*Indicates the lead agency

Estimated Resources Required: Staff time required to incorporate this as a policy of the CoSWMP is undetermined at this time.

2. Analyze forms of site separation equipment, and determine if the site operator can utilize a pretreatment process for recovering materials from the waste stream. Compile cost data analysis along with a staff report and recommendation.

Responsible Agencies: Ventura Regional Sanitation District (VRSD)* and Ventura County Planning Division

Estimated Resources Required: This task will take one staff person's time approximately two to three weeks to research and report recommendations. Input from industry and cities will also be needed.

3. Continue to study and research energy recovery options, and determine which option(s) may be economically and environmentally viable alternatives to traditional waste disposal methods for Ventura County. This study will encompass identifying front-end costs (as well as a cost analysis), air pollution control requirements, funding sources, and marketability of end production. Criteria will also be developed to help identify possible locations for additional waste to energy and resource recovery facilities. Keep up with alternative "state of the art" resource recovery technology.

Responsible Agencies: Ventura Regional Sanitation District (VRSD)* and Ventura County Planning Division

Estimated Resources Required: Depending upon the amount of energy recovery options available, a 3 to 4 month effort may be required for one full time staff person. Input from private enterprise, and cities will also be required.

4. Continue short term program tasks 1, 2, 3, and 4, and redefine these tasks as needed. Responsible agency and estimated costs will likely remain the same unless revised during the triennial update of the CoSWMP.

C. Long Term (10-20 years)

1. Coordinate implementation of waste to energy plant(s) in Ventura County if option 4 above proves feasible. Responsible agencies will remain Ventura County RMA and VRAS.
2. Coordinate implementation of source and/or site separation programs in Ventura County. Responsible agency will remain Ventura County RMA and VRSD.
3. Continue short and medium term program and redefine these tasks as needed. Responsible agency and cost estimates will likely remain the same unless revised during the triennial update of the CoSWMP.

*Indicates the lead agency

CHAPTER VI - LITTER MANAGEMENT

6.1 INTRODUCTION

Litter is solid waste which has not been disposed of properly in a waste container or approved solid waste disposal site. A recent state law limits littering to the act of discarding small amounts of waste matter usually carried on or about the person. However, litter includes all improperly discarded waste materials, such as, convenience food, beverage and other product packages or containers. Litter does not include properly discarded waste from the processing of agricultural commodities, mining, logging, saw milling or manufacturing operations.

The California Waste Management Board (CWMB) estimates that litter cleanup cost the State of California about 100 million dollars a year. The costs for Ventura County's 1979-80 and 1980-81 litter cleanup programs were \$5,885 and \$15,757, respectively. In Ventura County, littering and illicit dumping has historically occurred in the Ojai Valley, Simi Valley and other rural areas. Throughout the County litter is primarily concentrated along highways and secondary roads.

Within the cities littering occurs along the streets, near schools and shopping centers. Most temporary litter problems occur at major construction sites where demolition debris and rubble is allowed to accumulate.

In the past, litter control in Ventura County has been the responsibility of the cities and various County agencies; however, the County Environmental Health Department has the primary responsibility for responding to health related litter complaints.

Approximately 199 litter sites have been identified throughout Ventura County. The total amount of litter found at these sites has been estimated to be approximately 3,000 cubic yards. Although 144 of these sites have been cleaned up, and the litter removed and disposed of in a proper solid waste disposal site, it is difficult to stop future reoccurrence of the problem without adequate funding for surveillance, enforcement, and education.

6.2 LITTER COMPOSITION

The specific composition of litter is difficult to determine because there are so many variables which must be taken into account. Litter composition varies due to the season of the year, time of day, surrounding land use and population, current technology (disposable diapers), economic conditions, packaging trends, prices paid for recycled goods and landfill fees.

A. Nationwide

The best evaluation of litter on a national level comes from a study conducted in 29 states by the Transportation Research Board, Federal Department of Transportation (DOT), and Keep America Beautiful. The results of this study are presented in Table VI-1.

B. Ventura County

In 1980 the Ventura Regional Sanitation District (VRSD) made a study of litter composition on the promenade beach section of Ventura Beach. From the data presented in Table VI-2 it can be seen that paper and plastics make up the majority of Ventura County beach litter, based on the actual number of items identified. However, on a weight basis, cans and glass items made up 30 percent of the total weight.

Table VI-3 presents the composition standard that the VRSD uses for determining roadside litter composition. From the data presented in Table VI-3 it can be seen that paper is the predominant item found in roadside litter (53.25 percent), followed by glass (15.75 percent), and cans (15.4 percent).

TABLE VI-1

NATIONWIDE
LITTER COMPOSITION
ESTIMATE

<u>Item</u>	<u>Percent of all Pieces</u>
Paper	59%
Cans	16%
Plastics	6%
Glass, Bottles, and Jars	6%
Miscellaneous	<u>13%</u>
Total	100%

SOURCE: Transportation Research Board, DOT

TABLE VI-2

ESTIMATE OF VENTURA BEACH PROMENADE LITTER COMPOSITION

<u>Litter Type</u>	<u>Weight in Pounds</u>	<u>Percent by Weight</u>	<u>Percent of All Pieces</u>
Paper	146	12	42
Cans	242	20	14
Plastics	41	3	36
Glass	251	18	6
Miscellaneous	<u>574</u>	<u>47</u>	<u>2</u>
TOTALS	1,218 pounds	100%	100%

SOURCE: VRSD

TABLE VI-3

*ROADSIDE LITTER
COMPOSITION STANDARD

<u>Item</u>	<u>Percent of all Pieces</u>
Paper	53.25%
Cans	15.4%
Plastics	6.7%
Glass	15.75%
Miscellaneous	<u>8.9%</u>
TOTAL	100.0%

* Data was obtained during 1978-1979

Source: VRSD

6.3 RESPONSIBILITIES AND COORDINATION

In order to conduct litter management activities coordination is required between State, County and City agencies having responsibilities for litter control.

A. State

A primary responsibility of the CWMB is to provide litter management assistance to local governments by providing grant funds, public information, educational materials and technical assistance.

The California Department of Transportation (CALTRANS) has two offices which serve Ventura County. The CALTRANS Ventura district office is responsible for providing litter cleanup on State roads throughout the County except in Thousand Oaks and Simi Valley. These areas are serviced by the Cal Trans West Valley district office. CALTRANS periodically cleans road shoulders.

B. County

The Ventura County Resource Management Agency, Environmental Health Division, has the primary responsibility for providing litter enforcement and coordinating countywide litter management activities. However, recent State cuts in the litter grant program has minimized the Environmental Health Division's efforts in these areas. Currently, the Environmental Health Department is responding to health related litter complaints. In the past the major enforcement effort has been related to identifying and cleaning up illegal dumpsites. In addition to the Environmental Health Division, several other County agencies are responsible for litter control, including the Planning Division, the Public Works Agency, and the Police and Fire Departments. Figure VI-1 indicates the agencies within Ventura County responsible for coordinating litter control efforts.

C. Cities

Within the cities, the Public Works Directors coordinate litter cleanup projects. The Chambers of Commerce are also very active in conducting and overseeing volunteer efforts. For instance the Channel Islands Harbormaster worked with the Chamber of Commerce and concerned citizens in order to promote clean up of Hollywood and Silver Strand beaches.

Volunteers from many organizations throughout the County have conducted litter cleanup projects. With current funding cuts in the litter management program, volunteer groups will play a larger role and will be more heavily relied upon for litter cleanup in the future.

FIGURE VI-1

LITTER MANAGEMENT COORDINATOR WITHIN VENTURA COUNTY

STATE

CWMB - Grants, Technical Assistance, Education, and Public Information
DOT, CALTRANS - Cleanup
Parks - Cleanup

COUNTY

RMA - Environmental Health - Monitoring, Control, and Education
RMA - Planning - Planning
RMA - Building and Safety - Abandoned Vehicles
PWA - Flood Control - Cleanup
PAA - Parks Dept. - Cleanup
VRSD - Operation of Anti-Litter Stations
Fire Department - Weed Abatement
Sheriff/Probation Departments - Cleanup

CITIES

Public Works - Cleanup
Police - Abandoned Vehicles

LOCAL VOLUNTEER EFFORTS

Chambers of Commerce, Boy Scouts, etc.

MEDIA

Assist in Public Information Campaigns

D. Ventura Regional County Sanitation District (VRSD)

The VRSD is responsible for operating antilitter stations and monitoring litter cleanup in and around disposal sites they operate. In the past they have conducted litter cleanup operations at illegal dumpsites located on public property identified throughout the County.

6.4 REGULATIONS AND ORDINANCES

Littering and illegal dumping are regulated by many State, County and City ordinances. A summary of these regulations is provided in the following Table.

TABLE VI-4

SUMMARY OF LITTER
REGULATIONS

<u>CODE</u>	<u>SECTION</u>	<u>DESCRIPTION</u>
Agriculture	16151	Prohibits throwing, depositing, garbage into water or onto State land.
Civil	1941.1	Establishes garbage disposal as a duty of both landlord and tenant.
Fish and Game	12015	Requires offenders to remove unlawful material.
Fish and Game	5650	Prohibits polluting of State waters.
Fish and Game	5652	Prohibits the illegal deposit of refuse in waters.
Harbors and Navigation	133	Prohibits the discharging of oil on navigable waters.
Harbors and Navigation	151	Prohibits the intentional or negligent depositing of oil in navigable waters.
Health and Safety	13002	Prohibits the throwing of flammable substances.
Health and Safety	4401	Prohibits depositing of wastes in navigable waters.
Health and Safety	4450	Prohibits depositing of animal refuse in streams, rivers, creeks and ponds.
Health and Safety	4476	Prohibits disposal of specific materials in sewers and garbage in streets.
Penal Code	374a	Provides rewards for those turning in illegal litterers or dumpers of wastes matter.
Penal Code	374b	Prohibits the littering or dumping on public or private highways.
Penal Code	374b.5	Makes 374b an infraction until July 1, 1983.
Penal Code	374d	Prohibits the placing of animal carcasses within 100 feet of streets, allies, highways or roads.

Penal Code	374e	Prohibits littering in water.
Penal Code	592	Prohibits disposing of garbage and rubbish deposited in canals.
Penal Code	969e	Previous conviction of litter codes.
Public Resources	5008.7	Covers littering in state parks.
Public Resources	5092	Prohibits unlawful deposit in roadside rests receptacles.
Public Resources	3460	Prohibits the unlawful disposal of used oil.
Streets and Highways	224	Specifies materials not to be deposited in refuse disposal receptacles at roadside rests.
Streets and Highways	888.2	Prohibits household or commercial wastes from being deposited in parkway receptacles.
Vehicle	23111	Prohibits the throwing of lighted substances on highways.
Vehicle	23112a	Prohibits depositing glass, or trash on highway.
Vehicle	23112b	Prohibits depositing of rocks, dirt, refuse anywhere on right-of-way.
Vehicle	23113a	Requires immediate removal of obstructional or injurious material.
Vehicle	23114	Prohibits the spilling of loads, other than clear waters or feathers from live birds.
Vehicle	23115	Requires rubbish vehicles to be covered in order to prevent spilling load.
Vehicle	35102	Regulates transportation of loose farm products, 120 inches in width.
Vehicle	42001.7	Provides for punishment and subsequent convictions under Section 23111 and 23112.
Ventura County Ordinance Code	4702	Prohibits disposal of solid waste in any place except an approved disposal area.

Ventura County
Ordinance Code

4706

Prohibits accumulations of solid waste on private property and disallows the carrying or deposition onto any other property.

Ventura County
Ordinance Code

4707

Prohibits the accumulations of solid waste which may become a public nuisance.

(In addition, a number of City regulations address the subject of litter.)

SOURCE: Ventura County Environmental Health Division, 1982.

6.5 LITTER MANAGEMENT OPERATIONS

Throughout the County motorists and pedestrians account for the majority of litter along the highways, secondary roads and beaches. Illegal dumping is a significant problem in several areas within the County where household refuse, construction materials, and landscape cuttings are dumped.

A. Unincorporated Areas

Littering in the unincorporated areas of the County are generally caused by motorists and pedestrians and are concentrated in the following areas:

Ojai Area: Highway 33, Creek Road, Old Baldwin Road, Baldwin Road, Rice Road, Casitas Vista Road, Dennison Grade, and South Mountain Road.

Fillmore Area: Grant Avenue, Old Telegraph Road, Goodenough Road, and Ventura Street (Hwy. 126).

Piru Area: Main Street, Center Street, Howe Road, Torrey Road, and Piru Canyon Road.

Santa Paula Area: Telegraph Road, and Ojai Road (Hwy. 150 North).

Oxnard Area: Vineyard Avenue, Central Avenue, Rice Road, Rose Avenue, Olds Road, and Arnold Road.

San Buenaventura Area: Victoria Avenue, Harbor Blvd., and Hwy. 33 North.

Motorist littering in the unincorporated areas of the County is predominately in and around the populated areas of Simi, Ojai, Piru, Santa Paula, Oxnard and San Buenaventura areas. In pursuit of leisure motorists and pedestrians litter along beach areas and some along service roads, as well as certain passive recreation roads in county areas.

Illegal dumping is a significant problem in several unincorporated areas due to dumping of household refuse, construction materials, and landscape cuttings.

Certain State roads have recurrent litter problems. Piru and Ojai Antilitter Stations and the Toland Road landfill have littering in their environs due to improperly covered trash being hauled to these facilities.

The County Property Administration Agency (PAA) Parks Department provides regular litter cleanup in each of its seven parks.

Several communities assign people to perform short-term public service through the County Probation Department to cleanup local litter. Other civic groups have conducted one-time local cleanup activities.

The State Parks and Recreation Department maintains regular litter cleanup and control services for State parks and beaches. However, littering frequently occurs at Reef Beach, Hollywood Beach, and at Rincon Beach Park and along its access highway.

The County Fire Department carries out a once a year weed abatement program in unincorporated areas and in five cities. CALTRANS carries out litter cleanup as part of its landscape maintenance activities.

County resources for dealing with litter problems in its unincorporated areas are limited primarily to activities funded from State and Federal sources.

In November, 1978, the VRSD and the Ventura County Environmental Health Division applied for, and obtained, a grant to establish a countywide litter control program. These funds were made available by the State Solid Waste Management Board as a result of the "Litter Control, Recycling and Resource Recovery Act of 1977 (SB 650, 1977, as amended by AB 651, 1978)". Programs approved by the CWMB were required to include activities in litter cleanup, public education and enforcement.

Utilizing the grant money provided by the State, a four point program was implemented for controlling litter in Ventura County. The program started in 1980, covered a period of 2½ years, and consisted of the following:

1. Surveys and Inspections

Environmental Health Department personnel conducted surveys and inspections in order to locate dumpsites and identify illegal dumpers for future enforcement action. In addition, commercial waste storage areas and vehicles entering antilitter stations and dumpsites were inspected.

2. Enforcement

During the grant funding period a vigorous enforcement effort was conducted by the County. Citizen complaints were referred to Litter Enforcement Personnel and enforcement actions were taken on situations that were proved to be contributing to roadside or community litter problems in general. During this period litter removal notices were mailed, citations and warnings were issued, and No Dumping signs were posted.

3. Surveillance

Surveillance is an integral part of any enforcement program. Therefore, indiscriminate dump sites were periodically reinspected to determine compliance by property owners or dumpers who had been issued violation notices, and to evaluate changes in the illegal dumping patterns.

4. Education

The County Environmental Health Division conducted a variety of educational activities during the program. Information concerning litter control was distributed on a regular basis throughout the County.

Regular consultations with local citizens served to increase public awareness of litter problems and methods of prevention.

The results of the County's Litter Program are provided in Table VI-5. Indiscriminate dumping is a dominant aspect of litter in Ventura County, as is evidenced by the 199 sites found. Results also suggest that a program designed to concentrate on these specific sites can be most cost-effective. Since the initiation of enforcement activities, 79 sites (33%) have been eliminated. This is a result of enforcement actions taken against property owners and illegal dumpers, spontaneous abatement due to property development, and natural causes such as fires and floods.

Sites containing household refuse were frequently found in areas adjacent to approved disposal sites. Four sites were located adjacent to the Santa Clara Landfill, one site was located next to the Piru Transfer Station, another was found near the Simi Valley Landfill and the Toland Road Landfill. This may be due to the distances between approved disposal areas, and the variance in operating hours of each site. As a result, persons who wish to dispose of a load of refuse at a landfill or transfer station may be forced to drive a considerable distance only to find that the site is not open. Rather than make a return trip, the material is left at the nearest convenient place.

TABLE VI-5
*LITTER CLEANUP ACCOMPLISHMENTS
1979-80

Location	Pounds of Litter Cleaned-Up	**Illegal Dumpsites Identified	Illegal Dumpsites Cleaned-Up	Average Amount of Litter Cleaned-Up Per Site (lbs)
County of Ventura	44,652	48	32	1,395
City of Oxnard	38,034	35	23	1,654
City of Thousand Oaks	17,600	41	23	765
City of Simi Valley	12,333	19	8	1,542
City of San Buenaventura	8,239	20	3	2,746
City of Santa Paula	5,538	23	18	308
City of Camarillo	5,159	5	1	5,159
City of Ojai	3,601	2	2	1,800
City of Port Hueneme	2,473	5	3	824
City of Fillmore	1,980	1	1	1,980
TOTALS	139,614	199	114	1,225 pounds

* Includes sites originally identified by VRSD as well as sites identified for clean-up by the County Environmental Health Department.

** Counts as a separate site each time litter reoccurs at the same location.

SOURCE: VRSD and Environmental Health Department 1980

B. Incorporated Areas

Certain generalizations can be drawn regarding the litter problems in Ventura County's nine incorporated cities. Roadside littering is generated in these areas by both motorists and pedestrians. Special litter problems occur around certain high schools. Trapped litter occurs regularly along roadways where there is a median strip landscaping, wire fencing, and/or heavily vegetated rights-of-way.

Illegal dumping of household refuse, construction and demolition materials, and landscape cuttings constitutes a significant litter problem. Most illegal dumping occurs on vacant land areas. Public beaches and parks also provide potential sites for littering.

The major cities in the County have ordinances regulating the handling of solid waste materials. However, enforcement of these regulations varies by community and is generally handled on a complaint basis.

Regular street cleaning provides major litter control and is carried out by private contractors in five of the nine cities (Camarillo, Ojai, Port Hueneme, Santa Paula, and Thousand Oaks) and by city personnel.

Mandatory trash pickup service, another effective litter control procedure, is a requirement only in the cities of Camarillo, Oxnard, and Port Hueneme. City employees pick up trash regularly in Oxnard and Santa Paula and only in certain parts of Fillmore and Port Hueneme. Elsewhere, it is handled by private contractors.

Simi Valley has a waiver system available. The City also conducts a program twice a year whereby disposal bins are placed at two high schools for the convenience of nearby residents.

Organized litter cleanup and antilitter prevention activities are carried out in most cities such as Oxnard which initiated a significant residential trash clean-up program. This program provides dumpsters on a weekend basis in various neighborhoods. The Chamber of Commerce in Fillmore promotes local beautification through its annual yard cleanup campaign. The San Buenaventura Chamber of Commerce sponsors a local beach cleanup day. The City of Camarillo sponsors Camarillo Beautiful Week which includes residential trash cleanup.

A summary of litter programs provided by the 9 major cities within Ventura County are provided in Tables VI-6 through VI-14.

TABLE VI-6
LITTER MANAGEMENT SUMMARY
CITY OF CAMARILLO

A. Problem Description

Litter Sources

Mostly motorists and pedestrians.

Problem Areas

Litter problems along major thoroughfares and some local service streets. Adolpho Camarillo High School. Pleasant Valley School and Park play fields.

Illegal Dumping

Very moderate problems in City and moderate in environs. Mostly construction materials with some paper around commercial centers.

B. Program

Enforcement

Code Enforcement Officers in Planning Department handle all municipal code abatements, primarily zoning, and handle weed abatement with County Fire Department.

Street Cleaning/
Trash Pickup

Street cleaning carried out by private contractor weekly in commercial areas and monthly in residential. Private contractor trash collection varies in commercial areas according to user needs and is weekly in residential areas.

Cleanup/Prevention
Activities

Litter cleanup by street cleaning contractor, upon complaint, except for dump sites which go out for bid, and after major civic events by street cleaning contractor and Public Works Department. City and civic groups hold Camarillo Beautiful Week yearly with free passes to Camarillo Antilitter Station given out by VRSD upon request.

SOURCE: VRSD

TABLE VI-7
LITTER MANAGEMENT SUMMARY
CITY OF FILLMORE

A. Problem Description

Litter Sources

Motorist & pedestrians along major city thoroughfares. Other local streets tend to be litter free. Motorists litter along major roads in environs.

Problem Areas

Litter problems along Ventura Street & Old Telegraph Rd. in City & their extensions in County environs. Other County roads (Goodenough Rd. & Grand Avenue) have both litter and illegal dumping problems.

Illegal Dumping

Very minimal in City. Household dumping along several major roads. Toland Co. Park & VRSD Toland Landfill environs attract household, construction & plant material dumping.

B. Program

Enforcement

City Public Works Director on complaint basis primarily. County Fire Dept. handles weed abatement.

Street Cleaning/
Trash Pickup

Public Works Dept. cleans downtown streets daily and other streets on every 1, 2, or 3 weeks basis or as needed basis. City cleans Hwy. 126 within City Limits 1/month & is reimbursed by Cal Trans. Trash in residential areas is picked up partly by City and partly by private contractor. Commercial areas have trash picked up by private contractor.

Cleanup/
Prevention Activities

Public Works Dept. litter cleanup on weekends in parks and downtown main streets during street cleaning there and at other times when litter is spotted. Chamber of Commerce had a drive in 1980 to beautify city through residential yard cleanup campaign.

SOURCE: VRSD

TABLE VI-8
LITTER PROGRAM MANAGEMENT SUMMARY
CITY OF OJAI

A. Problem Description

Litter Sources

Mostly motorist.
 Pedestrians and
 motorists around
 high school and
 farm workers in
 agricultural areas.

Problem Areas

Littering on major
 city and county
 thoroughfares, some
 local connector
 streets, Nordhoff
 High School & its
 environs, Ojai
 Antilitter station
 environs.

Illegal Dumping

Very minimal in
 City and heavy in
 environs where
 predominantly con-
 struction materials
 with some landscape
 & household refuse.
 Santa Ana & Creek Road
 prevalent sites.

B. Program

Enforcement

By Public Works Dept.
 Code Enforcement
 Officer for viola-
 tions on public
 property. Littering
 on private property
 is handled by City
 Planning Director.
 County Fire Dept.
 handles weed
 abatement.

Street Cleaning/
 Trash Pickup

Street cleaning within
 City biweekly by private
 contractor and weekly
 on Maricopa Hwy. Trash
 pickup is carried out
 by private contractor
 on weekly or twice
 weekly basis at option
 of household.

Cleanup/
 Prevention Activities

Clean out of flood control
 barrancas & other channels
 by City Public Works Dept.
 Weekly litter cleanup by
 City Public Works Dept. on
 the two State Highways
 (inside City) billed to
 Cal-Trans on yearly basis.

SOURCE: VRSD

TABLE VI-9
LITTER MANAGEMENT SUMMARY
CITY OF OXNARD

A. Problem Description

Litter Sources

Motorists primarily with some pedestrian & farm laborer littering.

Problem Areas

Contains some of heaviest littered streets countywide. Major problem. Construction materials around landfill & household landscape materials elsewhere.

Illegal Dumping

Concentrations of illegal dump sites along Ventura Rd., Rose Ave., & Wooley Rd. Several dump sites each along McWane Blvd., Arnold Rd., Perkins Rd., & J Street. Also certain shopping centers, recreation, and beach areas.

B. Program

Enforcement

Public Works Dept. has City Code Enforcement Officer who enforces code complaints as well as vehicle littering & weed abatement.

Street Cleaning/
Trash Pickup

Street cleaning is by City Public Works Dept. every 3 days on commercial & business streets and once per month in residential areas. City Public Works Dept. picks up trash in residential areas once a week and as requested in commercial and industrial areas.

Cleanup/
Prevention Activities

City Parks Dept. maintains city beach areas, whereas Public Works Dept. maintains their parking lots. Street litter cleanup is on complaint basis with certain areas checked by City Public Works Dept. periodically. City is organized into neighborhood councils staffed by the Community Relations Division in the City Manager's Office. City uses Probation Department "volunteers" on weekends for litter cleanup in parks and other landscape areas.

SOURCE: VRSD

TABLE VI-10
LITTER MANAGEMENT SUMMARY
CITY OF PORT HUENEME

A. Problem Description

Litter Sources

Motorists and
Pedestrians

Problem Areas

Littering along major
thoroughfares and the
service road adjacent
to beach.

Illegal Dumping

Very moderate problem,
primarily of household
refuse with some con-
struction materials.
Illegal dumping con-
centrated along Hueneme
Road area.

B. Program

Enforcement

Various codes and
zoning enforced by
Planning Dept.'s
Code Enforcement
Officer. Weed
abatement handled
by County Fire
Dept.

Street Cleaning/
Trash Pickup

City streets contracted
for cleaning by private
company. Most cleaned
weekly with several
every two weeks. Trash
pickup once a week by
City Public Works Dept.
in residential areas &
for some commercial
businesses pickup of
cans by City on as
needed basis. Shopping
centers & large apart-
ment complexes have
trash picked up on as
needed basis by City
contracting with
private firm.

Cleanup/
Prevention Activities

Litter cleaned on beach
with sweeper, Public
Works Dept. personnel,
and juvenile "volunteers"
in summer from County
Probation Dept. Streets
cleaned of litter by
City Public Works
Department on as needed
basis.

SOURCE: VRSD

TABLE VI-11
LITTER MANAGEMENT SUMMARY
CITY OF SAN BUENAVENTURA

A. Problem Description

Major Sources

Primarily motorist and pedestrian.

Problem Areas

Motorist & pedestrian litter along Harbor Blvd. and Ventura Ave., Telegraph Rd. & certain local streets. Ventura High School a major litter site, certain shopping centers.

Illegal Dumping

Significant problem, primarily on private property in vacant lots. Several sites along Victoria Ave., East Main St. & Hall Canyon Road.

B. Program

Code Enforcement

City Code Enforcement Officer in Building & Safety Division of Community Development Dept. enforces primarily zoning but, also, street related litter and certain other types of complaints. Weed abatement handled by City Fire and Public Works Department.

Street Cleaning/
Trash Pickup

City Public Works Department cleans business streets 3 times a week and all other streets every 2 weeks. Trash pickup is carried out by 2 private contractors on weekly basis.

Cleanup/
Prevention Activities

Litter is cleaned up upon complaint to Public Works Department. City Parks Department handles litter cleanup at City parks and beach, cleaning parks on a once to three times/week basis. A crew of five youths clean beach litter five times/week during summer and Department empties litter cans twice a week remainder of year. City Chamber of Commerce Beach Committee sponsors annual Beach Cleanup Day in summer.

SOURCE: VRSD

TABLE VI-12
LITTER MANAGEMENT SUMMARY
CITY OF SANTA PAULA

A. Problem Description

Litter Sources

Motorist and pedestrians along most City major thoroughfares.

Problem Areas

Major pedestrian and motorist litter is found along Main St., Harvard, Ojai Rd., Telegraph Rd., railroad right-of-way & Santa Barbara St. Motorists littering in environs along Hwy. 150 and 126.

Illegal Dumping

Significant problem both within City & environs. Primarily household materials in city at various sites. Heavy concentration of illegal dumping in alleyways and vicinity of dumpsters, in 12th Orchard, Santa Paula and Grant Line.

B. Program

Enforcement

Planning Dept. handles zoning violations. Building Dept. handles health & safety problems. Public Works Dept. conducts seasonal weed abatement and some lot cleanup of trash and debris.

Street Cleaning/
Trash Pickup

City Public Works Dept. cleans all streets twice monthly. City Public Works Dept. provides trash collection normally once a week at curb-side on voluntary subscription basis for a fee and some commercial pickup 5 times/week. Commercial trash collection is available also. City provides no dumpster or trash bin service.

Cleanup/
Prevention

Litter cleaned up by City Public Works Dept. upon complaint and on daily basis in City parks. Civic organizations have done litter cleanup on occasions.

SOURCE: VRSD

TABLE VI-13
LITTER MANAGEMENT SUMMARY
CITY OF SIMI VALLEY

A. Problem Description

Litter Sources

Primarily motorists and pedestrians.

Problem Areas

Heavy illegal dumping and littering along streets and vacant lots in environs of Simi Valley Landfill. Easy St. has combination litter from motorists and workers. Litter along Los Angeles Ave., Royal, Madera, First St., Cochran, Alamo and Yosemite Streets. Certain shopping centers and recreation areas.

Illegal Dumping

Significant problem. Primarily construction materials and household trash. Some landscape cuttings. Major sites include Easy St., West Los Angeles Ave., Sinaloa Rd., Cochran St. and Madera St. Household items sometimes dumped along Ditch Rd., Tapo Canyon Rd., Township Avenue and Kuehner Rd.

B. Program

Enforcement

City Human Resources Dept. has two Code Enforcement Inspectors who enforce City Municipal Code violations and respond to complaints. County Fire Dept. handles weed abatement.

Street Cleaning/
Trash Pickup

Street cleaning by the City once weekly along commercial streets and median strips. Cleanup in residential areas continued. Trash picked up by local contractors on once a week basis for residential areas and commercial areas as needed up to 5 times a week.

Cleanup/
Prevention Activities

City cleans up after complaints. Use by County Probation Department of juvenile direct work "volunteers" was 1 day/week during 1980 summer to cleanup roadside litter. City has put together anti-litter slide presentation for schools, businesses and general public.

TABLE VI-14
LITTER MANAGEMENT SUMMARY
CITY OF THOUSAND OAKS

A. Problem Description

Litter Sources

Primarily motorist and pedestrian.

Problem Areas

Motorist and pedestrian roadside litter, along Willow Lane, Old Conejo Rd., West & East Hillcrest Dr., Borchard Rd., Foothill Dr., & Avenida de Los Arboles. Illegal dump sites recur periodically along Erbes Rd., East Hillcrest Dr., & Olsen Rd.

Illegal Dumping

Major problem especially in new residential developments and vacant lots. Combination of construction materials, household trash, plant cuttings, & abandoned autos. Dumping by householders and construction people are major sources for problems.

B. Program

Enforcement

City Public Works Dept. handles trash accumulations and trash receptacle violations. Planning Dept. has two Zoning Enforcement Officers. Ventura County Fire Dept. handles weed abatement.

Street Cleaning/
Trash Pickup

Street cleaning by City Public Works Dept. All streets in City cleaned every other month. City cleans County roads in environs and is handled by private companies on a once a week basis with special pickups by prior arrangements.

Cleanup/
Prevention Activities

City cleans up litter as it maintains landscaped City streets and other areas or upon complaint basis along public rights-of-way.

SOURCE: VRSD

C. VRSD Anti-Litter Stations

Anti-litter stations are operated at Camarillo, Ojai, and Piru. These anti litter stations are operated on the weekends as a convenience to local residences for disposal of trash collected in and around the home. During the 1981-82 Litter Management Program (8-81 to 3-82), approximately 12,040 cubic yards of trash and discarded items were collected at all three anti litter stations. Approximately 33,900 dollars in revenue was collected by VRSD for disposal at these stations for the same time period. Table VI-15 indicates the amount of litter collected and revenues from each of the three anti litter stations operated by VRSD.

TABLE VI-15
ANTI-LITTER STATION OPERATIONS
FY 1981-1982

<u>Station/Location</u>	<u>Cubic Yards Collected</u>	<u>Revenues Reported</u>
Camarillo	6,400	\$11,800
Piru	4,100	12,600
Ojai	1,540	9,500
TOTAL 12,040 cu. yds.		\$33,900

SOURCE: VRSD, 1982

In the past VRSD collected materials for recycling at the anti-litter stations. This practice was not profitable and was discontinued according to VRSD; however, metals are still collected at the Ojai station. In the future, items will be recycled based on economic feasibility. The information concerning locations and hours of operation of the three major anti litter stations are provided in Table VI-16.

6.6 CURRENT PROGRAMS

Currently the cities are conducting voluntary litter control programs and enforcing City Litter Ordinances. The VRSD is continuing to operate three anti litter stations. However, since State Litter Grant funds are no longer available, the County's litter management effort will mainly consist of enforcing litter ordinances on a complaint basis. Due to the lack of State funding a fully coordinated litter management program cannot be implemented at this time.

However, the County will continue to seek financial assistance for litter management activities. If the County is successful in obtaining the necessary funding the following objectives will be accomplished over the next three years:

- o Develop a detailed updated cost effective Litter Management Plan.
- o Appoint a County Litter Management Coordinator responsible for coordinating anti-litter efforts.

- o Provide information and technical assistance for developing citizen anti-litter programs and organize volunteer efforts.
- o Implement survey, surveillance, monitoring, enforcement, education and clean-up projects.

TABLE VI-16
OPERATIONAL INFORMATION
FOR
COUNTY ANTI-LITTER STATIONS

WHERE	<p>CAMARILLO</p> <p>Camarillo Airport - Entrance off Pleasant Valley Road, 0.8 mile west of Las Posas Road. Phone: 484-9115</p> <p>OJAI -</p> <p>Off Highway 150 on Baldwin Road. Approximately three miles southwest of Ojai. Phone: 646-4597</p> <p>PIRU -</p> <p>Torrey Road off Howe Road. Phone: 521-1874</p>
WHO	Open to all private citizens and is limited to passenger cars, trailers, and pickups. <u>Commercial haulers are not allowed to use this facility.</u>
WHAT	Brush, tree and yard trimmings, lumber, tires, cans, water heaters, furniture, etc. Trailer are permitted at the Camarillo station. <u>Garbage, hazardous wastes and liquids are not allowed.</u>
HOW MUCH	<p>Cars, station wagons, pickups, vans, trailers:</p> <p>small loads, 5 cubic feet or less \$2.50</p> <p>regular loads, up to 2½ cubic yard \$5.00</p> <p>large loads, over 2½ cubic yards \$2.25 per cubic yard</p>
WHEN	<p>CAMARILLO - 10:00 a.m. to 4:00 p.m. Sunday.</p> <p>OJAI - 12:00 noon to 4:00 p.m. Friday and 10:00 a.m. to 4:00 p.m. Saturday</p> <p>PIRU - 10:00 a.m. to 4:00 p.m. Saturday</p> <p>All stations are <u>closed</u> New Year's Day, Washington's Birthday, Easter Sunday, Memorial Day, Fourth of July, Labor Day, Veteran's Day, Thanksgiving Day, and Christmas Day.</p>
SANITATION	<p>Cover loads in accordance with all City, County, and State regulations.</p> <p>Unload at location designated by site supervisor. Observe speed regulations.</p>

Source: VRSD 7/22/82

6.7 FINDINGS

A vigorous litter enforcement program is needed in Ventura County to deter litter problems at sites initially cleaned up. However, without state grant money the County can only provide enforcement on a complaint basis. It would require approximately fifty to eighty thousand dollars to provide a litter control program similar to that which was instituted under the initial litter grant program.

In addition, due to the large number of illegal dumpsites it is apparent that the number and availability of legal disposal sites is currently inadequate. It is recommended that an additional disposal site be provided in a convenient location in the western portion of Ventura County where the need is greatest. This site would serve Oxnard, Port Hueneme, and Ojai Valley. Illegal dumping could be further minimized by expanding hours of operation at the current disposal sites and anti-litter stations.

There is a definite need for additional antilitter refuse transfer stations throughout the County, and especially in Thousand Oaks, Camarillo and the Silver Strand in Oxnard.

The locations and operating hours of all sites should be more widely publicized through the local media.

Anti-litter stations should be made more accessible to the public and should be expanded to allow for source separation at the site. They should also handle recyclable materials such as aluminum, newspaper, and oil. This may make these sites more profitable, and provide permanent recycling centers for public use.

6.8 RECOMMENDATIONS

- A. Actively seek financial assistance and grants for County Litter Management activities.

Responsible Agencies: Environmental Health* and Ventura County Planning Division

Estimated Resources Required: 1 man month

Schedule: Short term planning period

- B. Investigate the need for establishing additional anti-litter stations.

Responsible Agencies: Ventura Regional Sanitation District (VRSD)* and/or private sector.

Estimated Resources Required: To be determined by responsible agency.

Schedule: Short to mid term planning period.

- C. Publish operating hours of all sites and transfer stations in local news media.

* Indicates the lead agency

Responsible Agencies: Ventura Regional Sanitation District (VRSD)* and Ventura County Planning Division.

Estimated Resources Required: On a quarterly basis, 1 person would be required for one day (1 man week/year).

Schedule: Short term planning period.

- D. Investiage ways anti-litter stations can be made more accessible to the public (i.e., recycling aluminum cans, etc.).

Responsible Agency: Ventura Regional Sanitation District (VRSD)*

Estimated Resources Required: 1 man month/year.

Schedule: Short term planning period.

* Indicates the lead agency.

CHAPTER VII - AGRICULTURAL WASTE MANAGEMENT

7.1 INTRODUCTION

The purpose of this chapter is to discuss residue and waste generated from agricultural operations in Ventura County. This chapter addresses both residues and wastes generated from crop production, raising of livestock, agricultural packing and food processing operations.

Changes in the price of fertilizer over the past few years have reduced the problems previously caused by storage of animal waste. The high prices associated with chemical fertilizers is a continuing trend. Therefore, animal wastes are being used extensively for fertilizing and soil amending. Crop residues are being used for livestock feed and tilling into the soil.

Farmers in Ventura County have traditionally reclaimed or recycled organic materials. For the most part, residues are recycled to the soil and do not pose any significant waste management problems. The major crop wastes that go to landfills are materials such as plastic film, pots, paper products and some agricultural residues which do not lend themselves to on-site disposal (References VII-1 and 2).

7.2 REGULATIONS

Although the individual farmer is responsible for disposing of agricultural waste, there are numerous regulations in the form of State and local ordinances governing agricultural waste management practices. The main source of information for farmers is the Farm Advisor and the Agricultural Commissioner. The California Waste Management Board (CWMB) has promulgated standards in the California Administrative Code, Title 14, Division 7, Chapter 3, Article 8 entitled "Agricultural Solid Waste Management Standards." These standards are provided in section 17801 to 17824, and govern disposal of agricultural waste. The intent of these regulations is to establish levels of performance for waste management practices so that adverse effects on public health are eliminated in relation to agricultural operations. Adverse effects may include the proliferation of vectors and nuisance insects, such as flies, associated with agricultural waste. Vectors may occur in immature stages or as adults in large numbers in excess of those found in the surrounding environment. Vectors can be associated with the design, layout and management of agricultural operations. Vectors disseminate widely from the property and can cause detrimental effects on the health and comfort of people living in surrounding areas. The CWMB regulations also control manures, dust and feathers generated from agricultural operations so that they will not cause detrimental effects on public health.

7.3 DESCRIPTION OF THE EXISTING AGRICULTURAL RESIDUE AND WASTE MANAGEMENT SYSTEM

A. Inspection of Agricultural Operations

For the most part, inspections are conducted by the County Environmental Health Division. This Division maintains the capability to enforce agricultural waste standards, and conducts appropriate site inspections of agricultural operations located within Ventura County. The frequency and timing of these inspections are based on public demand, the nature and

size of the operation, the season, the potential operational problems, and proximity to residential developments. Health inspectors usually inspect and ensure that reasonable operational security measures are in place. The County Agricultural Commissioner's Office makes periodic inspections of agricultural operations and can mandate a type of disposal if warranted, to protect the Ventura County Agricultural industry.

B. Correction of Adverse Public Health Conditions

When the County Health Inspector determines that agricultural operations or management practices relating to agricultural waste being employed result in the occurrence of excessive vectors or any other adverse public health conditions, the owner or operator of the property is informed in writing of the condition and required to promptly implement measures to correct the condition.

C. Agricultural Residue and Waste Management Practices

Agricultural operations should be managed in a manner which will not cause excessive vectors, odors, nuisance or other adverse public health conditions. Inspectors provide information or refer agricultural operators to sources of guidelines and technical expertise which can provide assistance in obtaining proper design and management plans to minimize vectors and odors. Agricultural organic waste is, for the most part, a potential resource and agricultural operations have implemented practices that provide for reclamation and resource recovery.

1. Manure

Adequate manure management practices are required to prevent nuisance and the creation of adverse public health conditions. Manure should be removed at frequent intervals in order to prevent the occurrence of vectors, odors and other adverse health conditions. Manure must be removed from confined animal areas and managed in a manner to prevent the creation of adverse health and nuisance problems.

2. Vegetable and Fruit Crop Residues

Vegetable and fruit crop field residues which are a potential source of vectors, odors and other conditions that can adversely affect public health, should be incorporated into the soil, completely consumed by livestock or removed from the field. After removal from the field, crop residues or wastes should be stored, processed or disposed of in a manner designed to prevent the creation of adverse conditions.

3. Processing Wastes

When decomposable waste from vegetable and fruit crop processing operations are a potential source of excessive vectors, pests, or other adverse conditions, management practices that will prevent such conditions within two days after the waste is generated are required.

4. Dust, Hair and Feathers

Dust, hair and feathers from confined agricultural animals or other operations should be managed so as to avoid hazards and public health and nuisance problems. This is accomplished by removing accumulations of hair and feathers and periodically disposing of these materials.

5. Dead Animals

Carcasses of dead animals with infectious diseases must be disposed of by means prescribed by the California Department of Food and Agriculture. If present, ectoparasites on carcasses are to be killed by the use of insecticides or fumigants, or by freezing or by other approved methods. The following alternatives may be used for animal carcass disposal:

- o Animal carcasses must be processed or disposed of within 24 hours or stored in insect and rodent proof containers or enclosures until removal can be accomplished for burning in incinerators approved by the County Air Pollution Control District (APCD).
- o In confined animal operations, nondiseased dead animals must be collected and removed or disposed of on the property. On pasture or rangeland in close proximity to areas of human habitation, nondiseased dead animals should be buried under four feet of compacted soil or equivalent cover. Any dead animal must be buried away from wells or groundwater.

6. Waste Ponds, Lagoons, Ditches and Pipelines

Ponds, lagoons, ditches and pipelines used for the transfer, holding, treatment and stabilization of manure or vegetable or fruit crop wastes should be managed so as to prevent the creation or harborage of excessive vectors, nuisance, odors or other adverse health conditions. Accumulations of floating solids, scum, and thick aquatic vegetation and the growth of weeds or other aquatic vegetation at the water's edge must be maintained at a minimal level in order to prevent adverse conditions. Disposal or utilization of the above practices must not create excessive vectors, nuisance, odors or adverse health conditions.

7.4 EVALUATION OF THE EXISTING AGRICULTURAL RESIDUE AND WASTE MANAGEMENT SYSTEM

Agricultural manures are mainly used as fertilizers. Crop residues are incorporated into the soil and are not generally considered waste in the true sense of the word. The selling of manure as a soil amendment may, however, require stabilization for pathogen reduction by heat treating or composting. This may especially be true for use on food crops. Some agricultural operations generate wastes which cannot be used for any useful purpose and require some means of disposal. Open burning is one means of disposal, however, no data exists for determining how much agricultural waste is disposed of in this manner. It is estimated that approximately 0.6 percent of all agricultural residue generated annually in Ventura County is a waste which has no practical use, and which must be disposed of by some means.

A. Livestock Manures

1. Poultry

The two major egg ranches in Ventura County sell all of the manure they generate to local farmers for fertilizer. This practice eliminates the need for disposing of chicken manure. The estimated tonnage of chicken manure is approximately 101, 650 tons a year (Table VII-1).

o Fairview Foods, Incorporated

Fairview Foods, Incorporated, located in Moorpark, maintains approximately 1 million chickens which are used for egg production purposes. These chickens generate approximately 200 tons of manure a week having a moisture content of 25% to 30%, and which contains approximately 2.5% to 3% nitrogen (Reference VII-5). All the manure generated at this ranch is sold for use as a fertilizer on local county farms (Reference VII-5).

o Egg City

Egg City is the largest egg producer in Ventura County. Egg City currently has 3 million laying hens and generates 250 tons of wet manure per day (Reference VII-6). At Egg City manure is spread, dried, and sold for fertilizer. The nitrogen content of the Egg City manure is approximately 4% and is popular among local farmers for use as a low cost fertilizer.

TABLE VII-1
ESTIMATED LIVESTOCK MANURE
GENERATED 1982

<u>Livestock Category</u>	<u>Number of Animals</u>	<u>Estimated Tons of Manure Generated</u>	<u>Sold for Fertilizer</u>
Cattle, Hogs & Sheep	34,300	55,560 (wet tons)	Incorporated into soil, sold as fertilizer or spread on pasture
Chickens	4,000,000	101,650 (wet tons)	Sold for fertilizer and incorporated into the soil

Estimated total: 157,210 (wet tons)

Source: Ventura County Farm Advisor

2. Cattle, Hog and Sheep

At the present time there are approximately 34,300 head of cattle, hogs, and sheep being raised in Ventura County (Reference VII-2). It is estimated that approximately 55,560 tons of manure is generated from these animals annually (Table VII-1) (Reference VII-7). Because of the current high cost of commercial fertilizers, there is a strong demand for animal manures for use as fertilizer. Manures from hogs, sheep and cattle do not pose a disposal problem, since these wastes are spread over large areas of pasture and farm land.

3. Miscellaneous Animal Waste

Enforcement of local ordinances governing kennel operations is the responsibility of the County Animal Regulation and Control Department. There are approximately 10 major dog and cat boarding kennels in Ventura County and approximately 52 veterinary service establishments. Wastes from these establishments are disposed of either by connection to and use of a common sewage treatment system or by use of on-site septic tanks. Small establishments may place waste in the trash for disposal. Thus these establishments have a relatively small impact on the solid waste disposal system. Pathogenic wastes from veterinary clinics are handled and disposed of as infectious waste (see Infectious Waste, Chapter X). Slaughtering, meat packing, and butchering - wastes from butchering, meat packing, and slaughtering can be marketed for rendering (as is done by Saticoy Meat Packing). A market may exist for smaller generators if some centralized point of collection can be arranged or collection route established.

B. Crop Residue

Approximately 856,003 tons of crop residues are generated in Ventura County annually (Tables VII-2 and 3). Approximately 393,073 tons are fruit and nut crop residues (Table VII-4) along with approximately 496,604 tons of vegetable crop residue (Table VII-3). Basically, there are only a few crops from which waste is generated in any significant quantity which requires landfill disposal.

1. Vegetable Crop Residue

Vegetable crop operations generate approximately 496,604 tons of residue annually (Table VII-2). Celery operations generate approximately 107,930 tons of residue, which is the largest amount of vegetable crop residue generated in the county. At present, the celery residue generated at three major packing sheds is spread and disked into the soil at nearby farms. Some celery packing shed waste is landfilled, however, and some is used as cattle feed. When celery is packed in the field, all of the residue is disked under.

Tomato packing operations generate approximately 53,950 tons of residue a year (Table VII-2). Most of this waste is disked into the soil; however, small amounts of tomato residue, broken stakes, and tie strings are generated, which require landfill disposal.

TABLE VII-2
ESTIMATED RESIDUE GENERATED FROM MAJOR
VEGETABLE CROPS PRODUCED IN VENTURA COUNTY

Vegetable Crops	1982 Harvested Acreage	Average Production (Tons/Acre)	Total Production (Tons/Yr)	Estimated Green Crop Residue Per Harvested Acre (Tons)	Estimated Residue Per Crop (Tons)	Reclamation Method*
Beans (Ford Hook)	8,142	*2.06	16,793	13.5	109,917	Disking
Beans (Snap)	638	4.4	2,811	10.0	6,380	Disking
Broccoli	6,260	5.16	10,245	15.0	93,900	Disking/Landfilling
Cabbage	1,832	17.04	26,486	10.0	18,320	Livestock Feed
Cauliflower	2,769	6.08	16,834	12.0	33,228	Disking
Celery	10,793	30.03	300,630	10.0	107,930	Disking/Livestock
Cucumbers	921	10.57	9,777	7.0	6,447	Shredding/Livestock Feed
Lettuce	6,387	12.45	71,003	7.0	44,709	Landfilling
Peppers	1,035	12.23	19,645	9.0	9,315	Disking/Livestock Feed
Spinach	2,412	8.96	24,399	5.0	12,060	Shredding/Disking
Sugar Beets	224	28.75	6,439	2.0	448	Shredding/Disking
Tomatoes	5,395	24.94	135,593	10.0	53,950	Disking
				Estimated Total vegetable crop residue	462,928 tons (includes multiple crop lands)	Landfilling

Sources: Ventura County Farm Advisor 1983
Ventura County Crop Report 1982
*(Reference VII-11)

*All crop residues have a potential as livestock feed. Only those used for feed in large quantities are indicated.

TABLE VII-3
ESTIMATED RESIDUE GENERATED FROM FRUIT AND
NUT CROPS PRODUCED IN VENTURA COUNTY FOR 1982

Fruit and Nut Crops	Acreage	Estimated Total Crop Residue (Tons)*	Reclamation Method
Apricots	100	750	Disking
Avocados	12,748	95,610	Disking
Grapefruit	1,242	9,315	Disking, Land Filling, and Livestock Feeding
Grapes	8	60	Disking
Kiwi	79	592	Disking
Lemons	21,824	163,680	Disking, Land Filling, and Livestock Feeding
Limes	69	517	Disking, Land Filling and Livestock Feeding
Oranges (Navels)	1,228	9,210	Disking Land Filling and Livestock Feeding
Oranges (Valencias)	11,819	88,642	Disking
Strawberries	2,227	16,702	Disking/Landfilling
Walnuts	1,066	7,995	Commercial Uses (Shells only)
ESTIMATED TOTAL		393,073	

*Note: 7.5 tons per acre is an overall average of estimated crop residues.
 Estimate includes leaves, multiple crops, prunings and residual fruit.

Source: Ventura County Farm Advisor, 1983 Crop Residue
 Ventura County Crop Report 1982

2. Fruit Crop Residue

Major fruit and nut crop operations generate approximately 393,073 tons of residue annually (Table VII-3). Nut crop residues are routinely sold for a number of uses, including incorporation in oil drilling muds, fuels, and feed. Approximately 4,500 acres (2,227 acres x 2 crops per year) a year of plastic is generated from strawberry fumigation operations and requires landfilling (Reference VII-2). This is about 500 pounds of plastic per acre (200 pounds for fumigation, 300 pounds per acre for beds to keep fruit clean as well as creating a "hot house" effect), or a total of approximately 22.7 tons a year.

Waste generated from citrus packing operations is suitable for cattle feed. However, in some cases this is not suitable, and it is disked into the soil along with other crop residues. Prunings generated from orchards are either stored and used for firewood, or burned in fields under APCD authorization and fire department permit on open burn days. Some prunings, mainly from avocado orchards, are currently being chipped and returned to the soil (Reference VII-2). There are no records or estimates of tonnage or orchard prunings generated annually in Ventura County. However, when orchards are taken out of production the residue may amount to over 30 tons per acre (Reference VII-4).

3. Other Crop Residue

Brush, land clearing, orchard removal - Disposal is usually to a landfill, although a limited brush shredding operation is underway in the County. This type of waste material can be used as ground cover or for ornamental uses. With large scale land clearing, waste volumes can be reduced through a chipping operation or by removal of firewood for resale.

7.5 ALTERNATIVE AGRICULTURAL WASTE MANAGEMENT METHODS

A. Landfilling

According to the Ventura Regional Sanitation District (VRSD) approximately 872 loads of agricultural waste (amounting to 6,753.3 tons) were disposed of in landfill sites in Ventura County from February 1982 to January 1983 (Table VII-4) (Reference VII-8). This amounts to less than 1.3% of the total amount of refuse disposed of at these landfills. Most of this waste was hauled by 43 haulers who presently have accounts with VRSD to dispose of waste from agricultural operations. The waste disposed of in landfill sites represents approximately 0.6% of the total amount of agricultural residue estimated as being generated in Ventura County in 1982. The balance of approximately 99.4% was either reused in some way by the generator or open-burned under permit. Considering the small quantity of agricultural waste disposed of in landfills, properly managed agricultural waste does not pose a burden on operating landfill sites in Ventura County.

B. Disking and Shredding

Of the 11 major fruit crops in the County, residue from walnuts is the only one reported to have a commercial value (Table VII-3). Four of the ten major vegetable crops were reported to be shredded prior to disking (Table VII-2) and only broccoli, celery, and tomatoes are reported to

require substantial landfilling (Table VII-2). It is preferable to shred rather than open burn clippings (Reference VII-2).

C. Fertilizing

Approximately 101,650 tons of chicken manure a year are sold for use as fertilizer.

D. Soil Amending

Ventura County has two commercial scale agricultural mushroom compost operations. One is operated by Castle and Cooke Foods in Camarillo. The second is operated by Del Norte Foods, Inc. The demand for mushroom compost from Castle and Cooke Foods has caused a 100% increase in sales since 1975. In 1982, Castle and Cooke Foods reported that they sold 10,454 tons of mushroom compost for use as a soil amendment (Reference VII-9). Del Norte Foods Incorporated reported that they sold an average of 3,120 tons of mushroom compost for use by local farmers as a soil amendment in 1982 (Reference VII-10).

7.6 FINDINGS

1. The dedication of the agricultural industry to reducing cost is a major factor in the recycling of farm waste.
2. Some crop residues which are not suitable for human consumption are used for livestock feed.
3. The high price of chemical fertilizers aids in maintaining a steadily growing market for mushroom compost and manures generated from livestock operations.
4. Compost heaps, agricultural residue storage areas, manure drying beds and other similar agricultural operations can, if not properly managed, cause objectionable odors.
5. Public health and nuisance problems resulting from improper management of agricultural residues and waste can be minimized in the County by adhering to the current agricultural management program and by providing an adequate enforcement program.
6. It is estimated that only 0.6 percent of all agricultural residue generated in Ventura County results in a waste that must be landfilled. The remaining 99.4 percent is either reclaimed or open-burned.

TABLE VII-4
MONTHLY TOTAL OF AGRICULTURAL WASTE
DISPOSED IN DISTRICT LANDFILLS
 (Toland, Santa Clara, Simi Valley)
 1982 to 1983

<u>Month</u>	<u>Number of Loads</u>	<u>Tons</u>
February 1982	44	220.1
March 1982	25	112.2
April 1982	2	12.7
May 1982	16	118.1
June 1982	161	1267.1
July 1982	76	574.6
August 1982	85	722.1
September 1982	133	1029.9
October 1982	167	1431.3
November 1982	40	381.7
December 1982	9	99.0
January 1983	<u>114</u>	<u>787.5</u>
	872	6756.3 ²

1. Agricultural waste includes processing residues as well as production residue.
2. Significant quantities of lemon, orange and avocado wastes are disposed of at County landfills. Agricultural waste can be divided into two categories based on points of generation: a) Growers who bring in wind damaged crops, tree trimmings, etc., from the field which are unsegregated and disposed of via burning or landfilling; and b) Waste from packing, canning, juicing, etc., which are commonly disposed of at a landfill or processed as animal feed, essential oils, peel, etc., (as market dictates).

Source: Ventura Regional Sanitation District

Agricultural waste going to Ventura County landfills account for approximately 6,756 tons annually. This is approximately 1.3 percent of the total amount of refuse disposed of in Ventura County landfills annually. Properly managed agricultural waste does not pose a significant problem.

7. There is a need to evaluate potential markets for the sale of agricultural wastes as livestock feed or product. This may be accomplished through waste exchanges and actively developing local markets.

7.7 RECOMMENDATIONS

- A. Continue enforcement of agricultural odor and vector problems on a case by case basis.

Estimated Resources Required: No additional resources needed, adequate staff are currently assigned to inspect agricultural operations.

Responsible Agencies: Environmental Health Division*, Agricultural Commissioner, and Farm Advisor (for information).

Schedule: Short, mid and long term planning period.

- B. Task: Continue to review enforcement policies and standards pertaining to the collection, handling, processing, loading, transport and disposal of agricultural waste.

Estimated Resources Required: No additional resources needed. Adequate staff are currently assigned to this task.

Responsible Agencies: Environmental Health Division*, Agricultural Commissioner, and Farm Advisor.

Schedule: Short, mid and long term planning period.

- C. Continue to issue permits and inspect agricultural waste management operations for compliance with permit conditions.

Estimated Resources Required: No additional resources needed. Adequate staff are currently assigned to accomplish this task.

Responsible Agencies: Environmental Health*, Agricultural Commissioner, and Planning.

Schedule: Short, mid and long term planning period.

*Indicates the lead agency.

- D. Evaluate potential markets and recovery systems in order to extend landfill life, and assist in the implementation of recovery, reuse, recycling, and marketing of agricultural wastes and residues.

Estimated Resources Required: It is estimated that 2 man weeks will be needed to evaluate potential markets for agricultural wastes and residues and identify additional recovery, reuse and recycling methods.

Responsible Agencies: Planning Division*, and Farm Advisor.

Schedule: Short and mid-term planning period.

7.8 DEFINITIONS

Soil Amendment - A mineral or composted material sold for the purpose of enriching soil that does not contain enough nitrogen phosphorus or potassium to be strictly classified as a fertilizer.

Vectors - Any animal that transmits a disease-producing organism.

* Indicates the lead agency.

CHAPTER VIII - HAZARDOUS WASTE MANAGEMENT

8.1 INTRODUCTION

Hazardous waste is defined in the Resource Conservation and Recovery Act of 1976 (Public Law 94-580, RCRA) as any waste substance "that may cause or significantly contribute to serious illness or death, or pose a substantial threat to human health or the environment when improperly managed." Further identification of hazardous wastes by California Department of Health Services includes any waste material which is toxic, corrosive, flammable or reactive.

Mismanagement of these wastes, particularly improper disposal or accidental releases, can lead to ground or surface water pollution, air pollution, fire and explosions, poisoning via the food chain and poisoning to humans through direct contact. The effect of these substances on human health include; cancer, birth defects, reproductive anomalies, brain and kidney damage, and skin, lung and heart diseases.

Accidental and irresponsible waste disposal practices in the past have resulted in irreversible environmental degradation and loss of human life. The problem has been aggravated by: 1) a lack of reliable data on hazardous material producers and users, 2) difficulties in providing surveillance and enforcement to diverse groups within industry, 3) difficulty in linking many chemicals to adverse health effects, and 4) lack of adequate resources and regulations to effectively control hazardous wastes.

8.2 CALIFORNIA'S HAZARDOUS WASTE CONTROL PROGRAM

California's Hazardous Waste Control Act of 1973 was the first comprehensive hazardous waste control law in the United States, and has served as a model for other states and the Federal government. An overview of the intent of this law is provided in the California Health and Safety Code, Chapter 6.5, Sections 25100 and 25101 as follows:

Section 25100. "The Legislature finds that increasing quantities of hazardous wastes are being generated in the state and without adequate and reasonable safeguards for handling, storage, use, processing and disposal, and further that such wastes can create conditions which threaten the public health and safety and create hazards to domestic livestock or to wildlife."

Section 25101. "The Legislature therefore declares that in order to prevent such hazardous conditions it is in the public interest to establish regulations and to maintain a program to provide for the safe handling, storage, use, processing and disposal of and recovery of resources from hazardous wastes."

California is authorized by the Environmental Protection Agency (EPA) to carry out the hazardous waste control program. This responsibility is carried out by the Department of Health Services' (DOHS), Division of Toxic Substance Control.

California's Hazardous Waste Control Program was established to assure "cradle to grave" regulation of hazardous waste, (i.e., from generation to storage, transport and disposal). The intention of these regulations is to

manage hazardous waste from the moment it is generated. Thus, the generator plays an important role in the overall hazardous waste regulatory program. The state however, issues permits only to facilities engaged in the storage, treatment, disposal or transportation of hazardous wastes. Generators are not required to obtain a permit, however they are required to report to the Environmental Protection Agency if they produce over 1,000 kilograms (2,200 lbs) of hazardous waste per month.

8.3 VENTURA COUNTY'S HAZARDOUS WASTE PROGRAM GOAL AND OBJECTIVES

The following are the primary goal and general objectives of the Hazardous Waste Program element of the CoSWMP.

A. Goal

The overall goal of Ventura County's Hazardous Waste Program is to protect public health and safety, minimize damage to the environment and wildlife, and protect property from the adverse effects of hazardous materials.

B. Objectives

1. Control Hazardous Waste Generators

Ensure that generators of hazardous wastes handle, treat, transport and dispose of such wastes in an environmentally safe manner so as to prevent short or long-term health hazards, ecological damage, and nuisances.

2. Control Abandoned Hazardous Waste Sites

Ensure that abandoned hazardous waste disposal sites are identified, and do not cause health hazards or environmental damage.

3. Reduce Illegal Dumping

Investigate all citizen complaints and increase public education.

4. Respond to Emergencies

Develop and implement a countywide contingency plan for emergency response to accidental and illegal hazardous material discharges to the environment.

5. Provide Comprehensive Hazardous Waste Management Planning

Assist in the development of countywide plans for source reduction, treatment, disposal, and resource recovery of hazardous wastes.

6. Provide a Plan for Treating/Disposing of Hazardous Waste Material

Require future industrial development to provide a plan for treating and/or disposing of any hazardous material generated.

7. Public Awareness Program

Include hazardous waste education in the overall solid waste public 8.4 DESCRIPTION & OF THE EXISTING HAZARDOUS WASTE MANAGEMENT SYSTEM

The following is a description of Ventura County's existing Hazardous Waste Management System.

A. Generation

Based on information submitted to the DOHS and EPA, approximately 26,511 tons of hazardous waste are generated annually in Ventura County. Of this, 11,025 tons are treated, stored, or disposed of at the site of generation and the remaining 15,486 tons are transported, mainly by truck, to off-site facilities. However, this estimate reflects only the hazardous waste reported by companies that generate more than 1,000 kilograms of hazardous waste a month, of which there are a total of 100. Sixteen of these industries have applied to the DOHS for a Treatment, Storage, and Disposal Facilities permit and received Interim Status Documents. The California Administration Code provides new requirements for the testing of hazardous waste.

Additional amounts of hazardous wastes are generated by several small businesses throughout the County that are not presently bound by the reporting requirements or are unaware of the State and Federal laws. There are over 1,400 manufacturing firms and 6,000 commercial facilities in Ventura County that may generate some quantity of hazardous waste. These industries are not subject to State inspection or permit requirements.

Pesticides are also bound by hazardous waste regulations, but also have additional requirements. This subject is therefore discussed in the "Pesticides" Chapter IX.

B. Inspection

Until January of 1981, Ventura County had only limited authority to effectively control hazardous waste. Assembly Bill 2691 (Tucker) amended sections of the State Hazardous Waste Control Law to extend the authority of local health officers. The new amendments specifically authorize the County health officer to enter and inspect any place or vehicle where hazardous waste is transported, generated, treated, stored or disposed. The local health officer may enforce the minimum standards and regulations for hazardous waste adopted by the DOHS. Due to the potential problems that arise from improper handling and disposal of the wastes, and the large number of industries producing hazardous waste, local governmental agencies must become involved in surveillance, monitoring and enforcement of hazardous waste control laws.

C. Storage

The State regulations require storage permits if hazardous wastes are generated on site and are stored longer than 90 days, or generated off site and stored longer than 96 hours.

D. Treatment

Alternative treatment technologies are becoming a major part of all effective hazardous waste management programs, with former Governor Brown's signing of Executive Order B-8881 on October 31, 1981. DOHS has embarked on a program to preclude the land disposal of extremely hazardous waste. In August 1982, DOHS proposed a timetable identifying certain wastes to be phased out of landfill disposal. By July 1985, all the hazardous wastes listed below will no longer be accepted at landfills in the State of California.

<u>Hazardous Wastes</u>	<u>Implementation Date</u>
1. Cyanides	March 31, 1983
2. Toxic Metals	November 1, 1983
3. Strong Acids	November 1, 1983
4. Polychlorinated Biphenyls (PCB's)	November 1, 1983
5. Liquid Halogenated Organics	January 1, 1983
6. Extremely Hazardous Halogenated Organic Sludges and Solids	July 1, 1985

Source: Department of Health Services (DOHS), 1983.

Implementation of this Executive Order depends on the availability of technology at the time of implementation. If suitable technology is not available for large commercial scale operations, implementation will most likely be postponed or discontinued. In order to provide for disposal of these specific hazardous wastes, new facilities have been planned for development in neighboring counties including the B.K.K. disposal facility in Los Angeles County and the Casmalia Landfill in Santa Barbara County. Both sites are scheduled to have treatment facilities on line by the stated Executive Order implementation dates.

These new facilities will be able to handle and treat more waste than Ventura County is likely to produce in each of the waste categories. The impact of this Executive Order on Ventura County is difficult to assess at this point in time, but waste treatment and transfer facilities may need to be established in order to reduce the cost of transporting waste to facilities outside the County.

E. Disposal

Since 1978, the bulk of Ventura County's hazardous waste was disposed of at the Simi Valley Class I Landfill. When the Simi site stopped accepting hazardous wastes, on November 19, 1980, the wastes had to be transported to Class I landfills in other counties. According to DOHS records, as of June 1981, hazardous wastes generated in Ventura County were being disposed of at the following sites: B.K.K. (3%), Kettleman Hills (Kings County) (22%), and Casmalia (75%).

Considering the resistance to establishing new Class I hazardous waste landfill sites, on-site treatment coupled with out of County disposal of the remaining residuals is the most feasible approach to managing for Ventura County's hazardous waste (excluding oil field waste) for the near term.

F. Spill Response Plan

The increased demand for chemicals to satisfy the needs of agriculture and industry has lead to an increase in the volume of hazardous materials transported through Ventura County, creating potential threats to human health and the environment from accidental spills and fires. In the event of accidental or illegal releases of hazardous substances, a spill emergency plan must be developed to identify specific actions and available resources necessary for the protection of life, property and the environment.

The purpose of Ventura County's Hazardous Materials Spill Response Plan (Appendix B) is to establish procedures that will protect life, property, and the environment, from the effects of a hazardous material spill, release, or fire.

1. Responsible Agencies

Different organizations have responsibility over spill response coordination depending on whether the spill occurs in incorporated cities or in unincorporated areas throughout the County.

Cities The primary responsibility for coordination of response to spills and releases on city streets and easements is vested with the law enforcement agency having traffic enforcement authority (i.e. for Port Hueneme, Ventura, Oxnard, Santa Paula, Fillmore, and Simi Valley it's the city police. All other cities it's the County Sheriff's Department).

The primary responsibility for coordination of response to spills and releases that occur off-highway is vested in the fire agency authorized to provide service to the location where the incident occurs.

Unincorporated Areas The primary responsibility for coordination of response to spills and releases on state highways is the California Highway Patrol. For spills on county roads and easements, responsibility lies with the County Sheriff's Department.

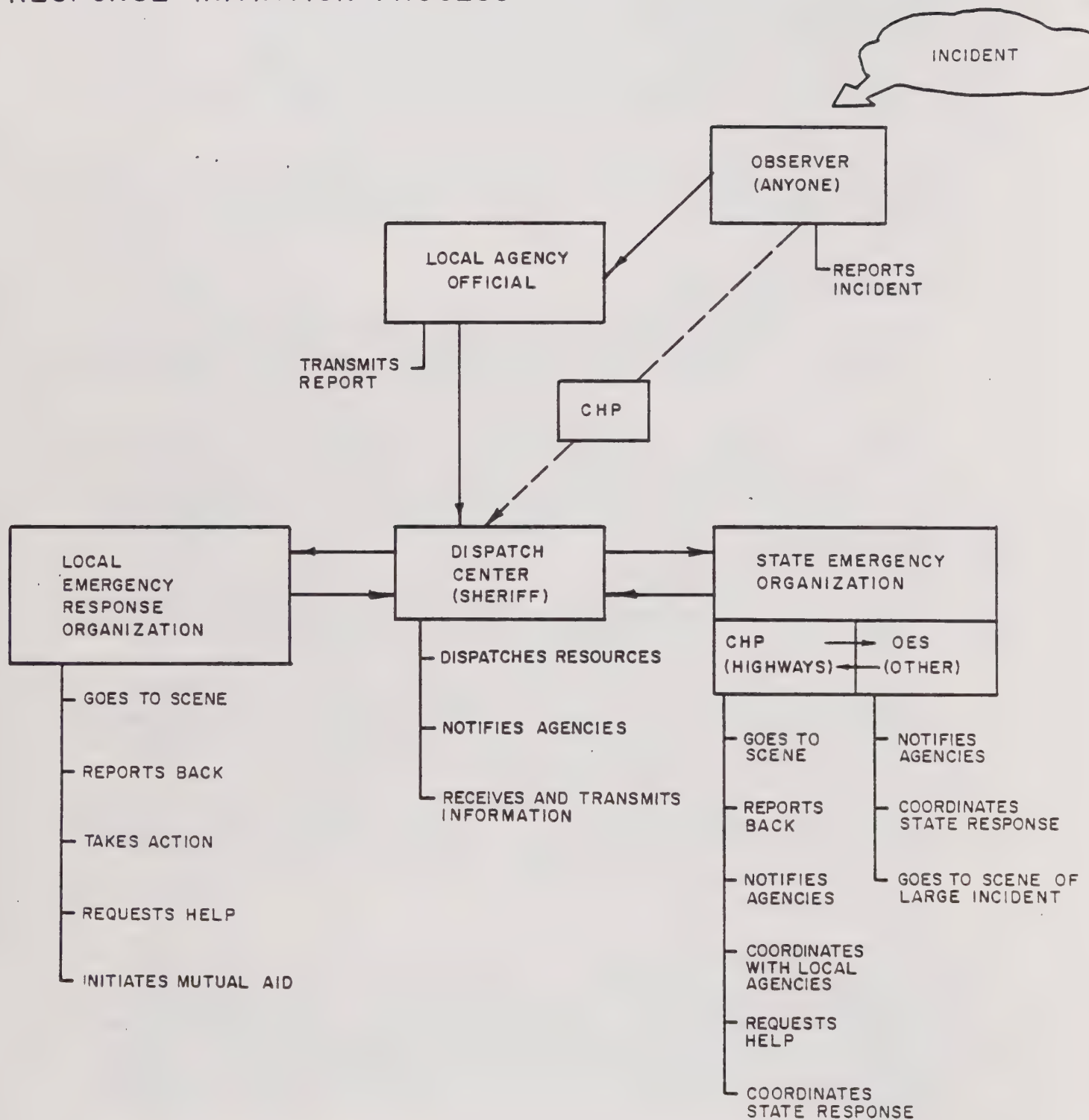
The primary responsibility for coordination of response to spills and releases that occur off-highway is vested in the fire authority that provides service to the location where the incident occurs. In unincorporated areas of the County, the Ventura County Fire District is the responsible agency.

2. Discovery and Notification

A hazardous material spill may be discovered and reported by the discharger, a member of a governmental agency, or by an observant citizen. Figure VIII-1 depicts the response initiation process. Basically, anyone discovering or becoming aware of a hazardous materials spill should report the situation to the local governmental authority.

The first local agency official either directly observing the situation or receiving a report from any other source will relay the report to

FIGURE VIII-1
RESPONSE INITIATION PROCESS



SOURCE: VENTURA COUNTY ENVIRONMENTAL HEALTH DIVISION 1983

the California Highway Patrol for subsequent actions. For more details on Ventura County's Hazardous Materials Response Plan, refer to Appendix B.

8.5 EVALUATION OF THE EXISTING HAZARDOUS WASTE MANAGEMENT SYSTEM

In order to Evaluate the Existing Hazardous Waste Management System in Ventura County, the Environmental Health Division conducted a survey of selected manufacturing firms identified as probable generators of hazardous waste according to the Standard Industrial Code (SIC) Classifications listed in EPA's 1980 report on waste generators. The type of waste generated and its hazardous properties are listed according to EPA industry classification and provided in Appendix C. There are more than 1,400 manufacturing industries in Ventura County which have SIC numbers indicating they are potential generators. Of the 1,400 facilities identified, 143 manufacturing firms were selected for the survey.

More than 6,000 nonmanufacturing firms and service industries were excluded from this survey due to time constraints. Included were dry cleaners, gas stations, repair shops, oil well service companies, and chemical warehouses that are likely generators of hazardous waste.

The 143 firms were located in eight cities and the unincorporated area of the County. The survey was conducted from January to June, 1982. The names and addresses of the facilities selected were obtained from the California Manufacturers Register, EPA's Hazardous Waste Generator List and the Directory of Industry for Ventura County.

Survey forms and compliance check lists were used in conjunction with on-site inspections of the selected facilities. The compliance check list includes excerpts from the Health and Safety Code and the California Administrative Code, Title 22, that pertain to generators of hazardous wastes.

Data obtained includes: type of product manufactured, raw products used, processes, quantity and type of wastes generated, disposal methods and frequency, and storage practices used by each industry. Violations were noted on the survey form. The survey was designed for data gathering purposes, and only in those instances where violations constituted imminent danger to public or environmental health were corrective notices issued and follow-up inspections made.

A. Results

The results of this survey determined that 123 of the 143 facilities surveyed do not generate hazardous wastes. Twenty firms were determined to be generators. Seventy-one industries (49%) were found to be in violation of the Hazardous Waste Control Law, and a total of 133 violations were observed (Table VIII-1).

TABLE VIII-1 - INDUSTRIES SURVEYED

*	SIC	Industry	Number in County	Number Surveyed	Number in Violation
**07		Agricultural Services	307	4 (1.3%)	3 (75%)
13		Oil/Gas Extraction	146	13 (9%)	7 (54%)
26		Paper & Allied Products	37	5 (14%)	2 (40%)
28		Chemical & Allied Products	30	12 (40%)	7 (58%)
30		Rubber & Misc. Plastic Prod.	48	7 (15%)	3 (43%)
32		Stone, Clay & Glass Products	73	6 (8%)	3 (50%)
33		Primary Metal Ind.	24	6 (25%)	4 (67%)
34		Fabricated Metals Products	56	17 (30%)	7 (41%)
35		Machinery	229	15 (7%)	7 (47%)
36		Electrical & Electronics	113	17 (15%)	10 (59%)
37		Transportation Equip.	56	7 (13%)	5 (71%)
38		Instruments & Related Prod.	55	6 (11%)	3 (50%)
39		Miscellaneous	<u>240</u>	<u>28</u> (12%)	<u>10</u> (36%)
			1,414	143	71

* Refer to Appendix C for Characteristics of Hazardous Waste by Standard Industrial Classification ((SIC) number.

** Some non-hazardous waste may have been manifested as hazardous waste in this category. For more information, refer to Chapter XII Oil Field Waste.

Source: Ventura County Environmental Health Division, 1983

The 1982 estimated quantity and types of wastes generated in Ventura County are listed in Table VIII-2. The percent of the 1982 Hazardous Waste Generation by industrial classification is illustrated in Figure VIII-2.

According to the survey results, the Miscellaneous Industrial category which includes ink residues, acid and alkalies generated the largest quantity of wastes in Ventura County during 1982.

The oil and gas extraction industry generated the second largest quantity of hazardous wastes followed by the primary metal industry, agricultural services, and the electrical and electronics industry.

The stone, clay and glass products industry generated the smallest quantity of waste which includes mostly solvents and acids.

TABLE VIII-2
1982 ESTIMATE OF HAZARDOUS
WASTE GENERATION IN VENTURA COUNTY
(Legal Disposal Off Site)

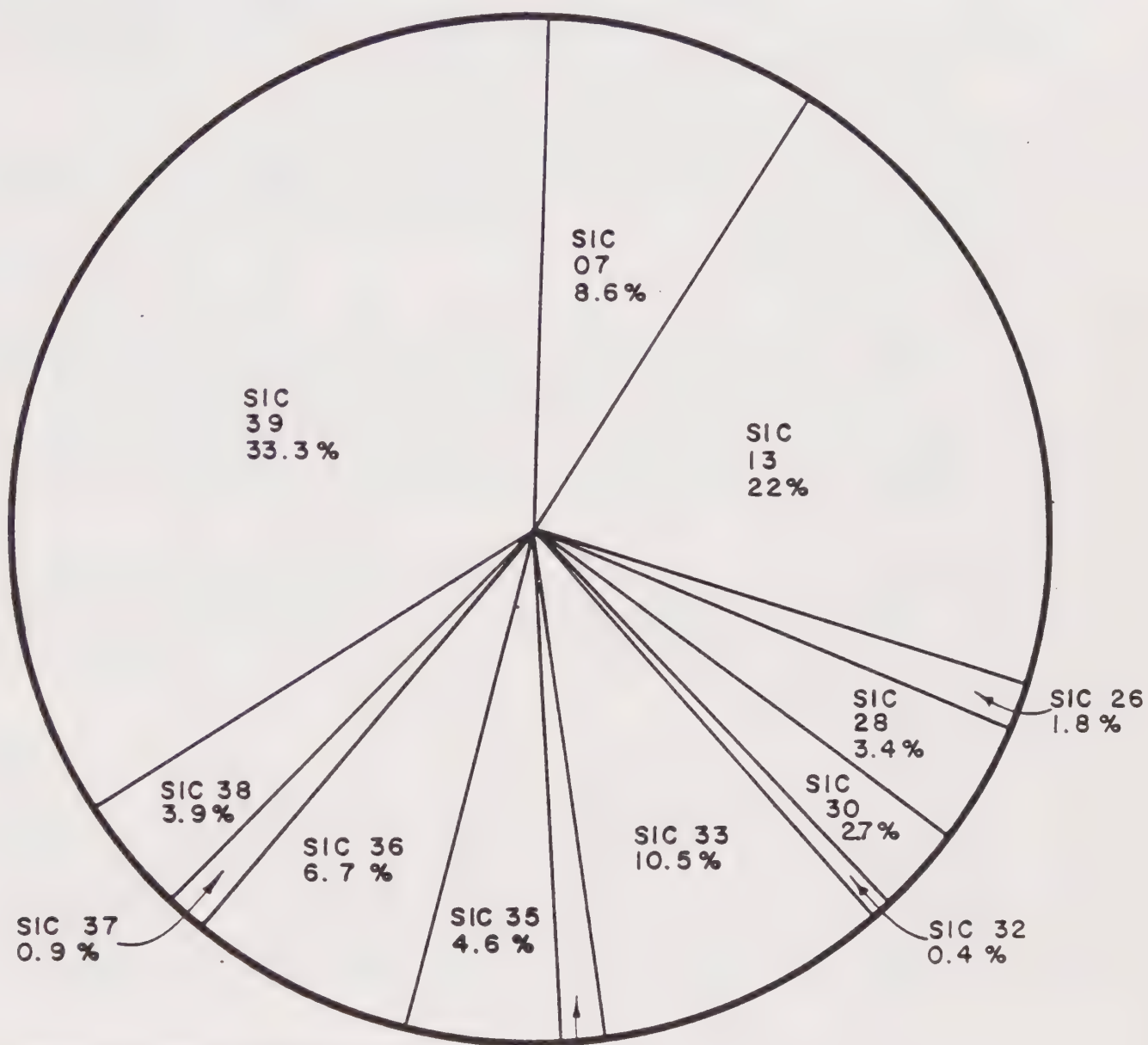
*SIC	Industrial Classification	Waste Streams	1982 Estimated Quantities (Tons)	Percent of Total
07	Agricultural services	Organic & inorganic chemicals pesticide wastes	1381.5	(8.6%)
**13	Oil/gas extraction	Acids, alkalies, oil waste, solvent, tank bottoms (exclude drilling muds)	3431.0	(22.%)
26	Paper & allied products	Clarifier sludges, oil ink starch residue	292.3	(1.8%)
28	Chemical & allied products	Acids, alkalies, misc organics and inorganic chemicals	546.0	(3.4%)
30	Rubber & misc. plastic products	Solvents, styrene, paint waste floor sweepings	436.8	(2.7%)
32	Stone, clay & glass products	Solvents, acidic wastes	73.0	(0.4%)
33	Primary metal industry	Acids, alkalies & solvents plating wastes, cyanides	1680.0	(10.5%)
34	Fabricated metal products	Acids, alkalies, solvents & heavy metals, cyanides	196.0	(1.2%)
35	Machinery	Misc. sludges, solvents plating wastes, paints	732.8	(4.6%)
36	Electrical & Electronics	Solvents, misc. sludges & acids plating wastes	1062.2	(6.7%)
37	Transportation Equipment	Solvents, acids, alkalies & metal containing sludges, cyanides	140.0	(0.9%)
38	Instruments and related products	Paint wastes, acid & solvents cyanides, organics	632.5	(3.9%)
39	Miscellaneous	Solvents, ink residues, acids and alkalies	<u>5304.0</u>	<u>(33.0%)</u>
TOTAL			15,908.1	100%

* Refer to Appendix C for Waste Characteristics by Standard Industrial Classification (SIC) Number

** Refer to Oil Field Waste Chapter XII, for additional information.

Source: Ventura County Environmental health, 1983

FIGURE VIII-2
PERCENTAGE OF HAZARDOUS WASTE GENERATED IN
VENTURA COUNTY BY INDUSTRIAL CLASSIFICATION*



SIC 07 AGRICULTURAL SERVICES
 SIC 13 OIL/GAS EXTRACTION
 SIC 26 PAPER & ALLIED PRODUCTS
 SIC 28 CHEMICAL & ALLIED PRODUCTS
 SIC 30 RUBBER & MISC. PLASTIC PRODUCTS
 SIC 32 STONE, CLAY & GLASS PRODUCTS
 SIC 33 PRIMARY METAL IND.
 SIC 34 FABRICATED METALS PRODUCTS
 SIC 35 MACHINERY
 SIC 35 ELECTRICAL & ELECTRONICS
 SIC 37 TRANSPORTATION EQUIPMENT
 SIC 38 INSTRUMENTS & RELATED PRODUCTS
 SIC 39 MISCELLANEOUS

Source: Ventura County Environmental Health Division, 1983

* Based upon a 10% sample size - refer to Appendix C for Characteristics of Wastes by Standard Industrial Classification.

** Refer to Oil Field Waste Chapter XII, for more additional information.

B. Violations

The violations observed during inspections included discharge of waste to the ground, discharge to trash bins, discharge to sewers without a permit, improper storage methods, improper record keeping, undetermined waste, and not registering with EPA as a waste generator (Figure VIII-3).

Inspectors were refused entry at 3 of the 143 facilities surveyed although data concerning their waste was obtained. The reasons for the refusal is not known, however such action does represent a violation of the Hazardous Waste Control law.

1. Illegal Discharges

Discharges of hazardous wastes to the ground accounted for 28.5% of the violations observed. Examples of these violations included discharge of corrosive and oily waste into streets and gutters, and discharge of residue from plastics and chemical manufacturers. Several industries were discharging waste waters from cleaning chemical storage containers and equipment. Leaking drums of hazardous materials and wastes also resulted in discharges to the ground.

Five of the industries surveyed were disposing or discharging waste of unknown chemical composition. A manufacturing firm, for example, was discharging an unknown mixture of grouts and resins onto their landscape. Two industries surveyed had drums of undetermined waste stored at their facilities.

2. Improper Storage

Hazardous wastes must be stored in secured areas to prevent unauthorized persons access to the waste. Improper storage of hazardous waste accounted for 31% of the violations found during this survey. Drums of waste materials were found to be stored in unsecured areas and on unpaved, unbermed areas, in which case a spill or leak could lead to ground or surface water contamination. In one instance, a petroleum equipment manufacturer had accumulated paint and solvent wastes for four years, and over three hundred leaking, bulging drums were found.

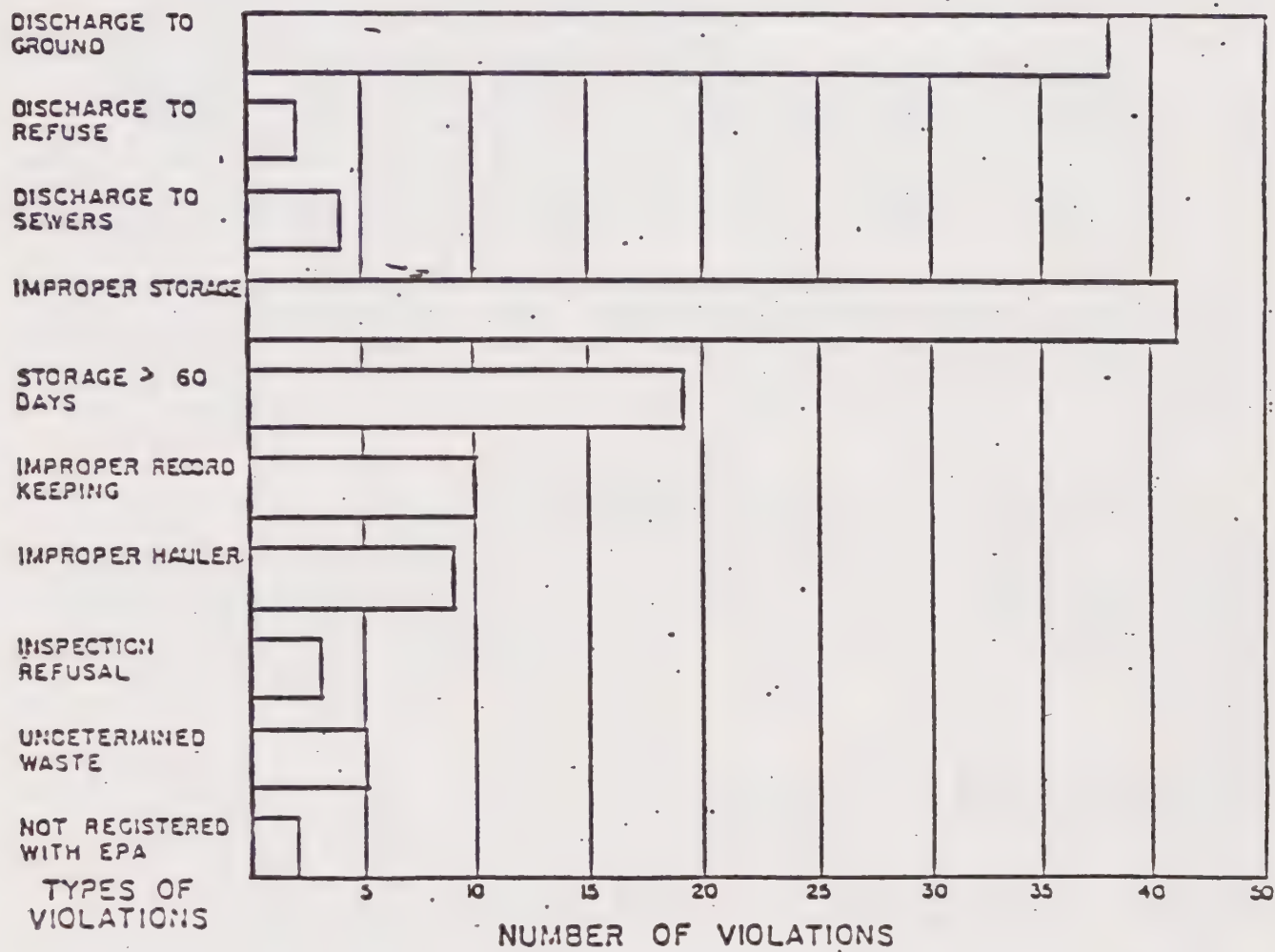
At the present time all generators that produce over 1,000 kg of hazardous waste per month are required to report to the Environmental Protection Agency. Three of the industries surveyed had failed to meet this reporting requirement.

3. Manifesting, Recordkeeping and Reporting

Ten of the industries surveyed had failed to use manifests as required by State Law, or were unable to locate them. Record keeping requirements for the generators of hazardous wastes are designed to track the waste from the moment it is generated to its final disposal. The manifest system depends on accurate reporting by the generator, transporter, and disposer of the waste, and submitting manifests to the DOHS.

FIGURE VIII-3

NUMBER OF VIOLATIONS BY TYPE OF VIOLATION



Source: Ventura County Environmental Health Division, 1983

4. Collection and Hauling

State law requires that haulers of hazardous waste be registered with the DOHS. The generator of the waste is required to ensure that this waste is transported by a registered hauler. Eight of the industries surveyed had their waste transported by unregistered haulers and indicated that the waste was no longer their responsibility.

5. Disposal

Twenty-eight of the facilities surveyed disposed of their hazardous wastes at the Casmalia Class I Landfill. Two facilities disposed of wastes at B.K.K. Class I Site. Thirty-two industries recycled wastes that included solvents, oil, and metals. Three facilities in the survey disposed of empty pesticide containers at the Simi landfill, and three disposed of their wastes on-site in evaporating ponds or lagoons.

Thirty-two of the industries surveyed did not know the location of the disposal site used for their wastes. Twenty-six facilities disposed of their hazardous wastes in sewers without proper permits, or in storm drains, gutters and dumpsters (Table VIII-3).

TABLE VIII-3
DISPOSAL SITES USED

Disposal Site Used	Industry
Casmalia Class I	28
BKK Class I	2
Recycled	32
Simi	3
Unknown	32
Other (sewers, storm drain, dumpsters)	26

Source: Ventura County Environmental Health Division, 1983

C. Findings

Specific problems found to occur in Ventura County include the following:

- o Lack of coordinated efforts among agencies in handling hazardous material incidents.
- o Increased findings of potential contamination of ground and surface waters.
- o Instances of illegal disposal (i.e. midnight dumping) of hazardous waste that pose potential public health hazards. The extent of this problem is unknown but numerous incidents have been investigated by the County's Environmental Health Division.

- o Instances of improper storage and disposal of toxic chemicals by industrial and commercial businesses in Ventura County are evident from the recent survey. Over 48% of the facilities surveyed were in violation of the Hazardous Waste Control Law. (Ventura County Environmental Health , Survey of Hazardous Waste Generators, 1982).
- o Incidents of toxic spills or emergencies involving toxic substances are occurring with increasing regularity. There are gaps in knowledge and inadequate training and preparedness of local personnel responsible for responding to such emergency incidents.
- o Numerous public requests have been received for information about toxic substances such as urea formaldehyde insulation, asbestos and pesticides.

8.6 ALTERNATIVE HAZARDOUS WASTE TECHNOLOGIES FOR VENTURA COUNTY

During the period prior to the Resource Conservation and Recovery Act (RCRA), there was an absence of regulations requiring long-term care, liability insurance, and adequate closure measures. However, with the advent of RCRA, many of those who disposed of wastes in a slipshod manner have recently lost their financial assets, and as a result, cleanup costs have had to come from the public sector.

Waste treatment technologies place most of the costs for waste management up front, leaving no hidden costs. Initial construction of facilities are capital-intensive, but when properly implemented, treatment can reduce hazards, reduce the overall volume of wastes transported, and recover valuable resources thereby reducing long term costs and quantities of hazardous waste being landfilled.

A. Treatment Facility Siting Guidelines

Currently, there are no criteria for properly siting hazardous waste treatment facilities. Since there are so many variables concerning the suitability of possible locations for these facilities, it is necessary to handle each proposed facility on a case by case basis. Industry representatives must coordinate with county and city representatives to determine the suitability of proposed facilities in specific locations. However, the following criteria should be considered when such facilities are proposed:

- o Proximity to Waste Generators - The closer these facilities are to the waste generators, the more economical they will be.
- o Land Use Compatibility - Locating treatment facilities in industrial areas would not be in conflict with the surrounding land use, and will ensure greater acceptance by local inhabitants.
- o Buffer Zones - Buffer zones around treatment facilities should be used to maintain a healthy distance between facility boundaries and residential communities, and other incongruous land uses.
- o Transportation Accessibility - Treatment facilities should be located adjacent to major access routes.

- o Environmental Impacts - Treatment facilities will need to meet all requirements relative to California's Environmental Quality Act (CEQA) before permits are issued.
- o Impacts on Nearby Communities - Proposed facilities must conform with the County or appropriate city General Plan in order to minimize impacts on surrounding communities.

These general siting criteria should be taken into consideration as part of the overall site selection and suitability process for waste treatment facilities. Compatible areas should be identified in the Land Use Element of the County's General Plan.

B. Appropriate Treatment Facility Options (Offsite)

There are five basic types of alternative treatment facilities appropriate for managing hazardous waste in Ventura County. Since the quantity of hazardous waste generated and disposed of offsite in Ventura County is relatively small (15,486 tons per year), only small size facilities for treating from 5,000 to 15,000 tons a year should be considered.

1. Transfer Facilities

These facilities are interim drop-off points for small quantities of hazardous waste. At these facilities, the wastes are analyzed, segregated, and recontainerized. Wastes are collected until a sizeable quantity is obtained and then transported economically to either a treatment facility or a landfill site. If established in Ventura County, a hazardous waste transfer facility would save considerable money for both large and small generators by reducing transportation and disposal costs. A study should be initiated by the County to determine the feasibility of establishing a transfer facility, and to determine suitable locations.

2. Liquid Organics Recovery Facilities

Approximately 44% of Ventura County's hazardous liquid waste consist of nonhalogenated solvents which may be reprocessed, refined and recovered for reuse. Some of the larger industries in the County are currently recovering solvents on site. However, this could in the future be expanded to handle larger volumes of Ventura County's wastes.

At a typical liquid organics recovery facility, liquid hazardous waste containing solvents, recoverable oils, and other organics are separated and undergo filtration, distillation or condensation. Toxic vapors are collected on adsorbants, or are destroyed by incineration. The recovered solvents and oils are either recycled, blended into fuels, or resold as raw materials for industry. Residues and remaining sludges are stabilized prior to landfilling or incineration. Remaining aqueous waste is sent to an aqueous waste treatment facility for further processing.

3. Aqueous Waste Treatment Facilities

A typical small aqueous waste treatment facility resembles a small sewage treatment plant. At these facilities heavy metals are removed by precipitation, organics are removed by carbon adsorption, oxidation and reduction and acids and alkalies are neutralized. If the resulting treated waste water effluent meets discharge requirements, the effluent is discharged to the sewerage system. Sludges are either stabilized and landfilled, or incinerated. An aqueous waste treatment facility could be used to treat aqueous waste from agricultural services, oil gas extraction, primary metal, and paper and allied products from industries located in Ventura County.

4. Solidification Stabilization Facilities

Sludges can be solidified by using lime or fly-ash. Other waste such as oil field muds can be stabilized by using plastic polymer coatings. However, all solidified waste must pass a standardized waste extraction test for measuring potential leachate in order to insure against leaching and migration of waste. Since many stabilization processes have not been fully proven, demonstration projects will need to be conducted prior to full scale use in Ventura County. The Ventura Regional County Sanitation District (VRSD) has proposed to begin testing a process for stabilizing oilfield muds at the Bailard Landfill in 1986 if the County and the DOHS approve the project.

If implemented, this test would provide data concerning the potential use of the stabilization processes for drilling muds in Ventura County and provide information on leachate control abilities of stabilizing materials.

5. Incineration Facilities

Organic liquids and solids (i.e. sludges) that cannot be reclaimed economically can be destroyed in high temperature incinerator facilities. Waste streams with sufficient available heat of combustion are used to reduce the cost of incineration through use as a fuel feed stock. In most facilities, liquids are filtered and blended and solids shredded prior to entering the incinerator.

Air pollution is minimized by using cyclones, electrostatic precipitators, or baghouses. Alkaline scrubbers may also be required to limit acidic gases produced. Incinerator residues are generally disposed of in Class I or Class II-1 landfills depending on DOHS requirements.

Ventura County Air Pollution Control District (APCD) requirements preclude use of incinerators for hazardous waste disposal in non attainment areas of the County. However, hazardous waste incinerators are available in other parts of the State for large volumes of hazardous waste. For extremely hazardous waste, wet air oxidation facilities will be operated by private companies in neighboring counties (Casmalia, B.K.K.).

C. Recycling Recovery and Reuse Options

The California Waste Exchange (CWE) has been set up by the DOHS to facilitate the reuse of wastes. CWE provides a no-cost, no obligation service to industry by listing wastes that are available, or wanted, in a bi-monthly catalog which is made available to interested parties. The advantages of using the exchange include the following:

- o Savings in disposal costs realized through recycling efforts.
- o Reductions in the amount of wastes going to landfills, thereby extending the operating life of landfills.
- o Savings in cost by providing wastes that can be used as a feedstock in another process.
- o Savings resulting from the decreased purchase and use of new materials.
- o Savings of natural resources.

Ventura County Industries are urged to use CWE services, as they not only save money but conserve natural resources as well.

D. Treatment Methods Available to Ventura County Industries (onsite)

There are three major on-site treatment methods available for use by Ventura County industries:

- o Chemical Reduction and Precipitation. These methods are useful for rendering heavy metal waste less toxic and less mobile prior to landfilling. They are of use in disposing of wastes from Ventura County's metal plating industry.
- o Neutralization - This is a very useful method for treating strong acids and caustics which are generated by Ventura County oil extraction and metal plating industries.
- o Distillation, Steam Stripping, and Carbon Adsorption Systems. These systems are readily available and commonly operated onsite to recover solvents, or remove organic contaminants, from waste water. These systems are currently being used by some of the electronic, transportation, oil, gas, dry cleaning, and agricultural industries in Ventura County that generate large quantities of solvents, and pesticide rinse water.

Considering the high cost of transporting waste to Casmalia and B.K.K., and the relatively small volume of hazardous waste generated in Ventura County (26,511 tons annually), on-site treatment prior to disposal of treatment residuals is a cost effective and viable alternative.

E. Needs Assessment

Present and future regulations concerning hazardous wastes will have significant impacts on the demand for treatment and disposal of these materials. The difficulty in specifically assessing Ventura County's needs at this time is complicated by the uncertainty regarding generators,

and the lack of information regarding specific wastes disposed of on-site, treated on-site, and recycled or disposed off-site. During the next five years, the Environmental Health Division of Ventura County will be conducting studies to determine the need for waste treatment facilities, and the feasibility of establishing transfer stations for hazardous waste. In addition, a detailed waste characterization and needs assesment will be conducted. These studies will be made part of the COSWMP implementation schedule for accomplishment in the near and mid-term.

Preliminary information, compiled by the University of California at Davis and the State Office of Appropriate Technology, was reported in the waste characterization and needs assessment study for the Southern California Hazardous Waste Management Project. This information indicates that 15,276 tons of hazardous waste disposed of off-site by Ventura County generators is amenable to treatment. Based on this preliminary estimate, if Ventura County achieved its full potential for waste treatment, only 210 tons of hazardous waste (excluding oil field waste) a year would require landfilling.

8.7 FINDINGS

A significant percentage of Ventura County's hazardous waste generating industries are not following State laws with respect to controlling said wastes. The inadequacies in how hazardous wastes are managed in this County appear to result from the lack of information regarding hazardous waste laws, the absence of available expertise to industries on the proper handling and disposal methods, and the lack of enforcement activities to ensure compliance.

The State has issued Interim Status Documents to 16 facilities in Ventura County that are engaged in storing, treating, or disposing of hazardous wastes; however, up to 1,400 generators do not fall in this category and will not be regulated or inspected by DOHS. To close this loophole, a local regulatory program is needed to carry out the mandate of State laws that pertain to generators not engaged in storage, treatment or disposal of hazardous wastes.

The following are recommendations for establishing an effective hazardous waste generation control program in Ventura County:

- o Implement a regulatory program for hazardous waste generators to ensure compliance with minimum standards of the California Hazardous Waste Control Law.
- o Coordinate enforcement efforts with the DOHS and other local agencies concerned with hazardous waste control.
- o Implement an educational program to assist in Hazardous Waste Control Law compliance.
- o Pursuant to Section 510 of California Health and Safety Code, establish a fee for generators of hazardous waste to support the program and recover the Health Officer's cost.

8.8 RECOMMENDATIONS

In order to implement specific findings made as a result of the survey phase, the Environmental Health Division plans to accomplish the following activities and coordinate with other County and regional government agencies as appropriate for the short term planning period 1983-1988. This plan concurs with their program recommendations which are as follows:

A. Control Hazardous Waste Generators

- o A county-wide survey is being conducted to identify all generators of hazardous wastes, and to construct an inventory of such generators. The survey will show types and quantities of wastes produced, storage methods, treatment, means of transportation, and location of disposal sites.
- o An ordinance was approved by Board of Supervisors on January 4, 1983, requiring permits and fees for all generators of hazardous wastes, and providing for inspections and monitoring by the local environmental health entity.
- o All known hazardous waste generators are inspected on an annual basis to ensure compliance with all applicable State laws and regulations.
- o Inspections are conducted of all Class II disposal sites on a regular basis to ensure that they are not being used for the disposal of hazardous wastes.
- o Complaints regarding illegal hazardous waste disposal practices by generators are being investigated and resolved.
- o Enforcement actions, consisting of office hearings, district attorney complaints and judicial actions are initiated against all violators of hazardous waste regulations.

B. Control Abandoned Hazardous Waste Sites

- o The Environmental Health Division staff will participate in abandoned site survey and clean-up activities, pursuant to any DOHS contracts. Such activities consist of pre-clean-up evaluations, prioritization, coordination with local government officials, community health-effects surveys, environmental sampling, epidemiological evaluations and other necessary actions.
- o Incorporate within the land use review process methods for handling abandoned sites revealed during project reviews to ensure that these sites are reported to the DOHS for possible clean-up action, and to prevent inconsistent land uses from encroachment upon such sites.

C. Reduce Illegal Dumping

- o All citizen complaints regarding illegal dumping of hazardous wastes are investigated. If necessary, abatement steps are taken and legal action initiated against the perpetrator to establish guilt, and recover costs of clean-up expended by the local entity.

- o A public education program has been initiated to discourage illegal dumping and encourage citizen reporting. The program consists of news releases, letters to waste generators and bulletins to police agencies.

D. Respond to Emergencies

- o Coordinate development of a countywide hazardous materials emergency response plan. The Environmental Health Division will coordinate development of this plan with law enforcement and fire protection personnel in the County.
- o Obtain equipment necessary to increase response unit capability.

E. Comprehensive Hazardous Waste Management Plan

- o Discussions will be initiated with the local solid waste management planning council and the DOHS for the purpose of assisting in the development of the hazardous waste element as part of the local solid waste management plan.
- o Participate in identification of locations which would be environmentally, socially and politically acceptable for hazardous waste facilities.
- o Participate in permit processing for the operation of hazardous waste transfer, processing and/or resource recovery facilities.
- o Investigate the need and feasibility to develop a small volume hazardous waste transfer station for the disposal of hazardous wastes generated by households, small business and others.
- o Complete a waste characterization study for Ventura County.
- o Develop a hazardous waste data base management system.
- o Investigate the need and feasibility of establishing a small volume hazardous waste transfer station.

Responsible Agency: The Environmental Health Division is the lead agency for the Hazardous Waste tasks identified above. They will coordinate with other agencies as appropriate.

Estimated Resources Required: Tasks have been scheduled for accomplishment by the Environmental Health Division's Hazardous Materials Management team composed of three persons.

Schedule: Short term planning period.

CHAPTER IX - PESTICIDE WASTE MANAGEMENT

9.1 INTRODUCTION

This chapter of the CoSWMP provides information concerning pesticide use, storage and disposal as it relates to Ventura County, and describes regulations governing pesticide operations. It also describes the existing pesticide waste management system in the County as well as providing information on alternative disposal methods. The term pesticides includes insecticides, herbicides, fungicides and nematocides.

9.2 REGULATIONS

Pesticides are regulated under many laws at the Federal, State, and local levels. At the Federal level, pesticide registration, use, storage and disposal are regulated under the Federal Insecticide, Fungicide, Rodenticide Act (FIFRA). Pesticide wastes, for the most part, are regulated as hazardous wastes under the Resource Conservation and Recovery Act (RCRA). Pesticide spills are regulated under the Clean Water Act.

At the State level, regulatory power over pesticides rests with several agencies. The California Department of Food and Agriculture regulates pest control operations, licensing, pesticide storage, transportation and disposal, under California Administrative Code, Title 3. The Resources Agency of California has the authority to veto pesticide regulations that do not meet State Environmental Quality Act standards. The Air Resources Board, in addition to the Ventura County Air Pollution Control District (APCD) and the State Water Resources Control Board, also regulate pesticide pollution of air and water, respectively. Pesticide waste disposal is regulated under California Administrative Code Title 22, subchapter 15, promulgated by the State Water Resources Control Board (Reference IX-1).

Within Ventura County, the Agricultural Commissioner's office is responsible for enforcing all pesticide regulations. In 1981-82, the Agricultural Commissioner expended \$227,449 to enforce pesticide regulations (Reference IX-2). The Agricultural Commissioner's office regulates licensing of restricted use applicators, distributors and dealers, and also conducts surveillance inspections. The County Farm Advisor's office provides information on pesticide use and trains pesticide applicators. The County's Environmental Health Division enforces hazardous waste regulations and safety standards for all hazardous waste including pesticides.

9.3 DESCRIPTION OF THE EXISTING PESTICIDE MANAGEMENT SYSTEM IN VENTURA COUNTY

A. Pesticide Use

Persons hired to apply pesticides are required to obtain a license for specific categories of use in accordance with California Administrative Code Title 3, Article 2 (Reference IX-3) and must prepare and maintain pesticide use records. Application of pesticides must be in accordance with label directions or information provided by a licensed pest control advisor. There are currently 110 pest control advisors licensed by the Agricultural Commissioner in Ventura County (Reference IX-4). In addition, pesticides used must be registered by the State Department of Agriculture and the Federal EPA.

B. Storage

Pesticides should be stored in a locked, dry cabinet or storage shed where children, livestock and pets cannot come into contact with them. Pesticides should be stored in their original labeled containers, and the label should be plainly visible. Pesticides should not to be stored in old bottles or food containers that could be mistaken for food or drink, nor stored near foodstuffs. Lids and bungs must be kept tight on containers when not in use. Until properly disposed of, empty pesticide containers must be kept in a locked storage area.

Containers should be periodically checked for corrosion, leaks, breaks and tears so that faulty containers may be replaced, repackaged or disposed of before they constitute a hazard. People should not be allowed to sleep or eat in pesticide storage rooms. Exhaust fans should be used in storage rooms to reduce high concentrations of toxic fumes and to hold temperatures down. Care should be exercised in the placement of the exhaust fans so that fumes will not create a health hazard. The outside of a pesticide storage area should be labeled with the words "Danger" and/or "Poison," along with a skull and crossbones with the words "Pesticide Storage Area." A list of the types of pesticides stored should be provided on the outside of the storage area. A copy of the inventory of any materials stored in warehouses should be on file with the local fire department and the County's Environmental Health Division. The Fire Chief should be furnished with the home phone numbers of the people responsible for the pesticide storage facility. Glass pesticide containers should not be placed in sunlight or where heat rays can concentrate and start fires. All combustible materials must be stored away from heating devices and incompatible pesticides should be stored separately.

C. Storage

Pesticides should not be transported in the same compartment with food or feed. Pesticide containers should be secured to vehicles during transport to prevent spills (Reference IX-3).

D. Pesticide Spills, Emergencies or Accidental Releases

Licensed pesticide applicators must report any emergency or accidental releases of pesticides from ground or air equipment to the Agricultural Commissioner, or to the Director of the State Department of Agriculture. Reports must be made within 12 hours of occurrence and must include the name of the licensed pest control operator, and/or the pilot if an aircraft was involved. In addition, the location, name of property owner, and the name of the pesticide and estimated amount spilled must be reported. The report must be made as quickly as possible if the pesticide spill poses a hazard or danger to man, animal or marine life, or substantial injury to property. The Ventura County Spill Contingency Plan, as described in Chapter VIII, of the CoSWMP, can be implemented for large spills.

E. Disposal

Pesticide wastes (i.e., pesticide products, rinse water and unrinsed pesticide containers) should be treated as hazardous waste and must be disposed of in accordance with all applicable requirements of the California Hazardous Waste Control Act and the Resource Conservation and Recovery Act. Therefore, pesticide waste concentrates, emulsifiable liquids, wettable powders, and dusts are to be disposed of in either approved hazardous waste (Class I) landfills authorized to accept the specific waste, or they should be properly stored until adequate disposal can be provided.

1. Rinsed Containers

o Rinse and drain procedures

Emptied pesticide containers which have held less than 28 gallons of a liquid pesticide should be rinsed and drained immediately after use in the following manner:

- a) Use water or recommended solvent for each rinse in the amount specified below.

<u>Size of Container</u>	<u>Amount of Rinse Solution</u>
1 gallon or less	1/4 container volume
5 gallon	1 gallon
Over 5 gallon	1/5 container volume

2. Place recommended amount of rinse solution in the container, replace closure securely and agitate.
3. Drain rinse solution from container into tank mix. Allow container to drain 30 seconds after normal emptying.
4. Repeat steps 2 and 3 above a minimum of two additional times so as to provide a total of 3 rinses. Other rinse methods may be used if approved by the Director of the State Department of Food and Agriculture.
5. After the final rinse, metal containers must be punctured on the top at the rim to allow remaining solution to drain.

o Disposal of rinse containers

Used, properly rinsed, empty pesticide containers must be disposed in the following manner (California Administrative Code, Title 3, Article 10, Sections 3141 and 3142) (Reference IX-3):

- a) In a solid waste disposal site, in accordance with regulations promulgated by the State Water Resources Control Board and the Regional Water Quality Control Board.
- b) In a recycling program approved by the Director of the Department of Food and Agriculture.

- c) At a holding facility approved by the Director of the Department of Food and Agriculture while pending disposal.

2. Disposal of Pesticides and Unrinsed Containers

Pesticides and unrinsed containers should be disposed of as a hazardous waste in a Class I landfill, in accordance with all hazardous waste regulations, (refer to Chapter VIII), or at a certified reconditioning establishment. These regulations do not apply to containers which hold or have held pesticides packaged and labeled exclusively for non-agricultural use when in the possession of a householder on the householder's property.

3. Combustible Containers

Farmers can obtain permits from the local fire department to burn combustible containers. Combustible containers are containers that can be completely destroyed by burning. Included in this category are paper bags, fiber drums, burlap bags, cloth bags, cardboard boxes, fiber boxes, wooden boxes and plastic bags. Combustible containers must be disposed of as follows:

- o Burn the empty combustible container in an open fire at the site of use as permitted by local laws and regulations.
- o Bury the empty combustible containers in an approved landfill site.
- o Herbicide (weed killer) containers should not be burned, they require burial in an approved landfill.

9.4 EVALUATION OF THE EXISTING PESTICIDE WASTE MANAGEMENT SYSTEM

In Southern California, 51,480 tons of pesticides and pesticide-related wastes are disposed of in Class I and II-1 landfills each year (Reference IX-5). Another 50,151 tons a year are disposed of onsite in the Southern California Region (Reference IX-5). Pesticide waste amounts to 1.75 percent of the total amount of hazardous waste generated in the Southern California Region (Reference IX-5).

In Ventura County, the characteristics and amount of pesticide wastes generated and disposed of is assumed to be directly proportional to the types of pesticides used (Reference IX-6). Two hundred seventy six different pesticides were reported used in Ventura County during 1982. Fourteen different pesticides were applied in non-agricultural areas for a total of 3,263 pounds of active ingredients annually. Twenty-seven different pesticides, mainly herbicides, totaling 16,821 pounds of active ingredients were used on ornamental plants. Fifty-six different types of pesticides were applied for maintaining rights-of-way along roadsides, railroad tracks, and utility easements. Application to rights-of-way totaled 110,978 pounds of active ingredients and equaled 1.6 percent of the total amount of pesticides applied in the County. Ninety-five pesticides, including insecticides, herbicides and fungicides, totaling 16,106 pounds of active ingredients, were used in commercial and landscape turf pest management programs. Thirty-eight different pesticides, totaling 4,378 pounds of active ingredients, were used

in residential pest control operations. Ten different pesticides totaling 16.49 pounds of active ingredients, were applied for public health purposes. Fifty different pesticides totaling 35,233 pounds of active ingredients were used for structural pest control purposes.

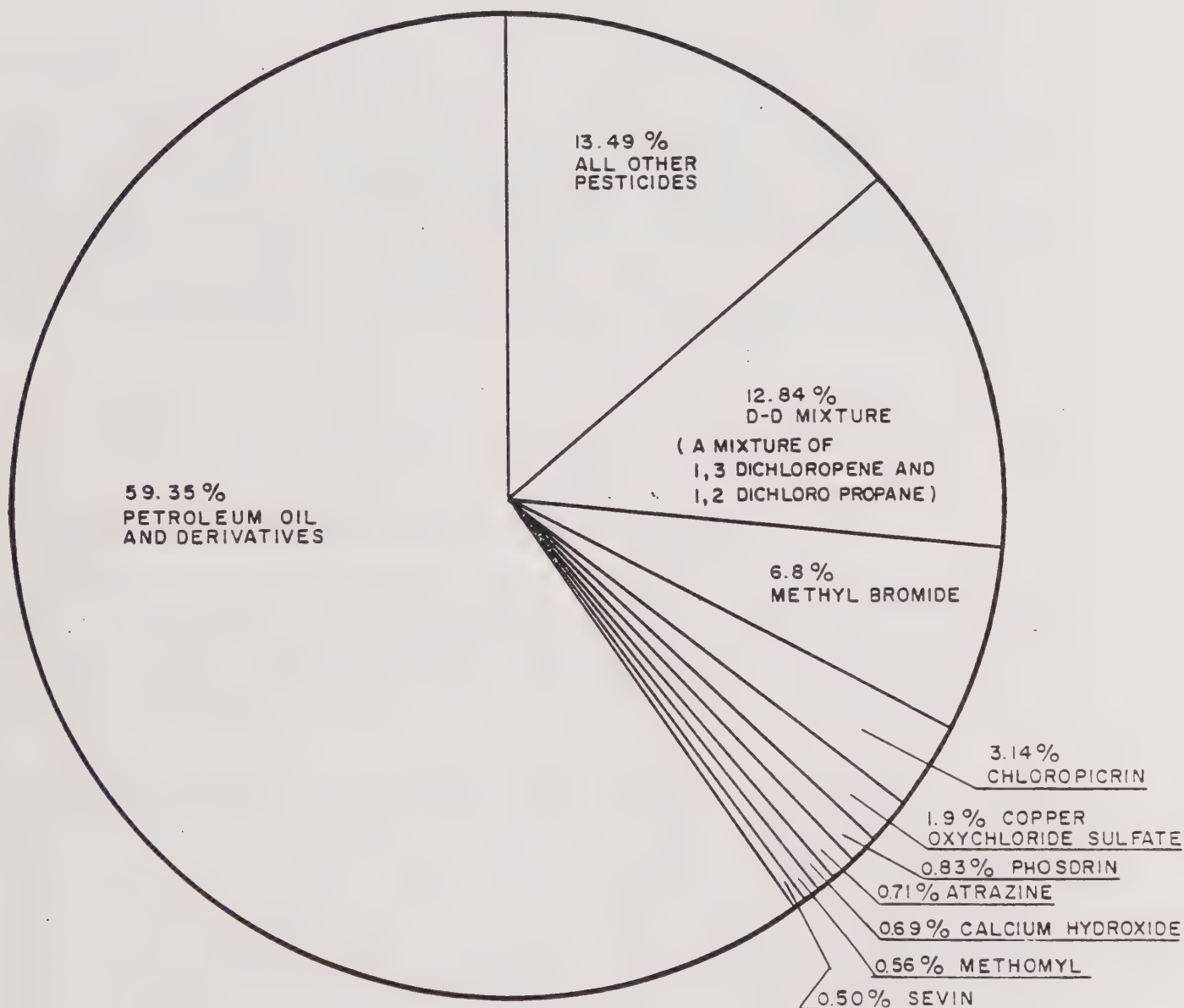
Pesticide applicators, farmers, commercial operators, distributors, dealers and home owners all either store, use, or dispose of pesticides and related waste. They are, therefore, included within this evaluation.

A. Pesticide Application

During 1982, approximately 7,058,837 pounds of active pesticide ingredients were used in the County (Reference IX-7). The largest quantity of pesticides applied was petroleum oil and its derivatives, which totaled 4,190,043 pounds of active ingredients and accounted for slightly more than 59% of the total amount of pesticides applied (Figure IX-1). The 10 most frequently applied pesticides during 1982 have been compared and rated by amount of active ingredients (Table IX-1). These ten pesticides accounted for 6,109,973 pounds of active ingredients, or approximately 86.55% of the total amount of active ingredients reported. The second, third and fourth most frequently applied pesticides are: D-D mixture, Methyl bromide, and choloropicrin; these are soil fumigants and are used on various crops.

Figure IX-1

PERCENT OF PESTICIDES USED COMPARED
TO TOTAL AMOUNTS OF ACTIVE INGREDIENTS
FOR THE TEN MOST FREQUENTLY APPLIED PESTICIDES
REPORTED IN 1982



SOURCE: COUNTY PLANNING DIVISION 1983
(BASED ON 1982 PESTICIDE USAGE REPORT)

100% = 7,058,837 POUNDS OF ACTIVE INGREDIENTS

TABLE IX-1
TEN MOST USED PESTICIDES
IN VENTURA COUNTY*
1982

<u>Pesticide:</u>	<u>Total Active Ingredients</u>	<u>Pounds of Active Ingredients Used</u>
1. Petroleum Oil and Derivatives		4,190,043.
2. D-D Mixture (A mixture of: 1, 3 Dichloropropane 1, 2 Dichloropropane)		906,957.
3. Methyl Bromide		480,295.
4. Chloropicrin		221,854.
5. Copper Oxychloride Sulfate		77,104.
6. Phosdrin		58,875.
7. Atrazine		50,456.
8. Calcium Hydroxide		49,400.
9. Methomyl		39,651.
10. Sevin (carbaryl)		<u>35,330.</u>
	TOTAL	6,109,965.*

*86.55 percent
of total amount
of pesticides
used for 1982.

Source: Ventura County Planning Division 1983; derived from State of California Department of Food and Agriculture Pesticide Use Report for 1982

1. Commercial Applicators

In Ventura County, there are 19 major licensed pest control application service companies, and 10 licensed aerial applicators that apply pesticides (Reference IX-4). All commercial pest control operators that apply pesticides must be licensed.

Commercial applicators use as much of the product in a container as possible since pesticides are costly to purchase. When containers are emptied, they are triple rinsed and allowed to drain into the mixing tank. Leftover rinse water, where possible, is used for mixing additional batches of pesticides. Rinseate that cannot be mixed and reused must be stored in tanks for eventual disposal at a Class I landfill site (i.e., Casmalia or B.K.K.) (Reference IX-4).

2. Farmers

Farmers can minimize pesticide disposal by not mixing more pesticides than they can use at any one time and by applying rinse water over the same field to which the pesticide was originally applied (Reference IX-4). However, contaminated materials are stored and disposed of at approved Class I landfills. Farmers can legally burn combustible containers on their own property after obtaining a permit from the County Fire Department. Since commercial applicators are used extensively by farmers, farmers do not normally mix or apply pesticides or dispose of containers on their own property.

3. Pesticide Distributors, Dealers, Manufacturers, and Reformulators

There are four major pesticide distributors in Ventura County (Reference IX-4). In addition, there are 24 licensed pesticide dealers, nine in Oxnard, seven in Santa Paula, two in Ventura, one in Bardsdale, one in Ojai, two in Somis, one in Moorpark, and one in Fillmore, who sell and store pesticides (Reference IX-4). There is one pesticide manufacturer, located in Oxnard, and one pesticide formulator located in Santa Paula (Reference IX-4).

4. Residential

According to a national survey conducted by the U.S. Environmental Protection Agency (Reference IX-9), pesticides are commonly found in about 9 out of 10 homes. They take many forms, including lawn and garden sprays, disinfectants, moth balls, pet flea collars, no-pest strips, flea powders, herbicides (weed killers), rodenticides (rat and mice poisons), or fumigants. These pesticides are usually sold in aerosol containers, glass or plastic bottles and are provided in a ready-to-use form and may be dust, liquids or baits. According to the same national survey, the most common methods of disposal of unused household pesticides are to place the material in the trash or to pour it down the drain (Reference IX-9). This can create potential problems for the trash collector who may become contaminated when the trash is compacted or create potential problems at the landfill site when the containers leak their contents to the surrounding environment. However, this situation is somewhat minimized when considering the large volume of solid waste disposed in landfill sites every year and the very small quantity of homeowner generated pesticide containers,

which are mostly empty. Also, when considering the large volume of liquid waste disposed to sewage treatment plants, the amount of pesticides poured down the drain would probably not have a substantial impact on plant operation, unless a large volume was disposed of at one time. However, more serious problems can occur due to improper storage of these materials around the home.

Approximately five hundred million pounds of pesticides are used annually in the United States by homeowners. Conducting accurate surveys of pesticides used, and disposed of, by homeowners can be difficult since they are not usually able to quantify the amount they use and dispose of in terms of pounds, quarts, or units of product used (References IX-8 and IX-9). In most cases, homeowners rarely know what pesticide active ingredients they use (Reference IX-9). During a household pesticide collection effort conducted in Michigan, much of the large volume of pesticides collected, required repackaging and sorting prior to transporting and disposal. It was found that the scope of the effort could have actually been minimized if the homeowners used the pesticide as directed on the label, did not purchase more pesticide products than they could use in one season and if they only purchased those pesticide products needed to provide the control required (Reference IX-8).

At the present time in Ventura County, there is no system for collecting, transferring and disposing of the quantities of pesticide wastes generated by homeowners (Reference IX-4). Most persons informally contacted by staff stated that they are presently storing quantities of unusable pesticides in their garage or storage shed while awaiting disposal. In order to obtain basic information to adequately assess the need for a pesticide collection and transfer facility, the Ventura Regional Sanitation District, in cooperation with the Agricultural Commissioner's Office, will be conducting a homeowner pesticide disposal survey which will provide more specific information on the types and amounts of pesticides stored in garages, workshops, sheds and other areas which require disposal. The survey will include questions relative to the methods currently being used by homeowners for disposing of pesticide wastes to ascertain the current need for a pesticide collection and transfer facility. This information can then be used to determine the size of facility needed and the types of pesticide wastes to be handled at the facility.

B. Disposal

Based on report forms submitted to the State Department of Health Services (DOHS) and the EPA concerning hazardous waste generated, approximately 8.6%, or 2,280 tons of the total amount of hazardous waste generated in Ventura County is generated by the agricultural service industry (Chapter VIII, Figure VIII-2). Approximately 307 persons reported to EPA that they treated, disposed and stored hazardous agricultural wastes. Hazardous waste was reported in the EPA survey in standard industrial classification 07, which includes agricultural services disposing of waste oil, pesticide containers, and pesticide rinse water. In a County Environmental Health Division survey conducted in 1982, minor violations were found at all four establishments surveyed. The violations generally related to the failure to have anti-siphon devices on hoses used for adding water to mixing tanks (Reference IX-10).

1. Concentrated Pesticides

Concentrated pesticides, such as those used by farmers and commercial applicators, which require substantial dilution for use, are expensive and for the most part are mixed sparingly and completely used. However, certain contaminated materials may be produced. The manufacturer will accept the return of some of these materials and will dispose of them in accordance with product warranties. However, small amounts of concentrated product waste may be generated and must be disposed of at a Class I landfill, such as Casmalia in Santa Barbara County.

2. Ready to Use Pesticides

Some farm and commercial pesticides, and most household pesticides, are ready to apply, and contain lower concentrations of pesticide ingredients. Most of these products have been specifically produced for home, garden, and turf use.

Presently the State of California Food and Agricultural Regulations, California Administrative Code Title 3, Article 10, Section 3145, provides specific exemptions from regulations for the storage, transport and disposal of pesticides for homeowner use (Reference IX-3).

A system for disposal of homeowner pesticide waste generated in Ventura County has been proposed. This alternative method is a pesticide waste collection system and transfer facility. This would provide homeowners an alternative method to current disposal practices. However an adequate survey must first be conducted in order to fully determine the need for such a facility and better scope out specific operations criteria. Such a facility would have to meet both State and local requirements.

3. Containers

o Rinsed Containers

In the past, properly triple rinsed and drained empty pesticide containers were disposed of at the Simi Landfill. In 1982, approximately 223 tons of rinsed and unrinsed pesticide containers were disposed of there at the Simi Landfill (Table IX-2). However, since the change in ownership of the Simi site in January 1983, the Ventura Regional Sanitation District (VRSD) is now accepting properly rinsed pesticide containers, for disposal at the Toland Road Landfill. From January to February 1983, 8.81 tons of containers have been disposed of at Toland Road (Table IX-3) for a fee of \$31.50 per ton (Reference IX-11). VRSD has worked with the County Agricultural Commissioner to develop the Toland Road site for disposal of properly rinsed pesticide containers, and the site has been approved by the Regional Water Quality Control Board. Disposal is to be conducted in accordance with waste discharge requirements for non-sewerable waste disposal to land. Title 22, subchapter 15, section 2521b states the following: "Adequately cleansed pesticide

TABLE IX-3

PESTICIDE CONTAINERS
DISPOSED OF AT TOLAND ROAD VALLEY LANDFILL
IN VENTURA COUNTY BY VRSD
DURING 1983*

<u>Month</u>	<u>Tons</u>
December 1982	20.83
November 1982	2.95
October 1982	10.15
September 1982	8.01
August 1982	21.06
July 1982	15.04
June 1982	9.02
May 1982	30.39
April 1982	12.34
March 1982	3.87
February 1982	3.66
January 1982	<u>5.15</u>
TOTAL	142.47 Tons**

* Triple-rinsed containers were accepted at only the Toland Road Landfill.

** The 1982 total was 223.2 tons.

Source: Ventura Regional Sanitation District (VRSD) 1983

FIGURE IX-2
VRSD
APPLICATION FOR DISPOSAL OF EMPTY CONTAINERS

Permit No. _____
Issue Date: _____
Expiration Date: _____

GENERATOR

Company Name _____ Phone No. _____

Address _____
Include City, State, Zip Code _____

Company Representative _____

Type of process which
produced the waste _____
(Examples: application of pesticides, papermaking, etc.)

Is this material a hazardous waste as defined by the California Assessment Manual
(CAM)? _____ (yes or no).

Source: Ventura Regional Sanitation District 1983

FIGURE IX-2 (Cont'd)
MATERIALS DESCRIPTION

_____ Empty Pesticide and/or Herbicide Bags _____ Empty Chemical Containers

Approximate size of each load (tons) _____

Approximate frequency of delivery _____

Material Contaminants (percentages) _____

I certify that the waste material as I describe it above is that waste which will be delivered to the hauler named below for disposal at the Toland Road Sanitary Landfill.

Date _____
(Signature of Authorized Company Representative)

HAULER

Company Name _____ Phone _____

Address _____
Include City, State, Zip Code

Company Representative _____

I certify to the best of my knowledge that the waste described above is that waste I will be hauling to the Toland Road Sanitary Landfill.

Signature of Authorized Company Representative

Print or type name

Date

Source: Ventura Regional Sanitation District 1983

FIGURE IX-3

HAULER AND GENERATOR PROCEDURES FOR DISPOSING OF EMPTY
PESTICIDE AND HERBICIDE CONTAINERS AT THE VRSD TOLAND
ROAD SANITARY LANDFILL

Only empty containers can be accepted for disposal. It is required that all metal and plastic containers be thoroughly rinsed before transport to the landfill for disposal.

The following summarizes the procedures for: (1) obtaining the permit; and (2) disposing of the material.

1. The hauler must complete a permit application for the disposal of empty pesticide/herbicide containers. The application must be filled out completely and legibly. The permit application form and a \$35 (\$100 out-of-county) non-refundable processing fee is submitted to: Ventura Regional County Sanitation District, Post Office Box AB, Ventura, California 93002.
2. The application will be reviewed. If found acceptable, an approved permit will be returned to the applicant. Copies will be kept on file at the District office and at the disposal site.
3. The hauler must notify the landfill on the date of delivery by calling (805) 525-8217. This allows personnel at the site sufficient time to prepare for delivery. Loads may be limited or postponed due to adverse weather conditions.
4. The generator shall prepare a non-hazardous waste manifest which fully describes the waste material. The hauler will sign the manifest and present the completed form at the site gate or scale area. The weighmaster, or designated personnel, will verify that the non-hazardous waste manifest and disposal permit correspond and describe the material brought to the site for disposal. Loads will be rejected if discrepancies are found. Loads with containers which are not empty will be rejected.
5. Pursuant to the Regional Water Quality Control Board's requirements for the disposal of empty containers at the Toland Road Sanitary Landfill, the following special procedures must be used:
 - (a) all containers must be empty
 - (b) an inspector will periodically visit the generator's establishment to insure that all containers stored for disposal are empty.
6. The weighmaster, or designated personnel, will direct the driver to the appropriate area for unloading. The material must be off-loaded in the intended area according to the approved disposal practice.
7. A disposal fee is to be paid in cash unless prior credit arrangements have been made with the District. Credit application forms are available upon request from VRSD (805) 656-2130, extension 45, at the District office. All credit applications must have a deposit when submitted.

Source: Ventura Regional Sanitation District 1983

containers: To be adequately cleansed, pesticide containers should meet the following conditions; (a) metal, plastic, and glass containers used for liquids shall have been processed by rinsing and draining or by other decontamination techniques. (b) The processing procedure shall include, or be equivalent to, at least triple rinsing with thorough draining and puncturing of the containers. (c) Rinse waters produced shall be placed in the spray tank or disposed of in accordance with the requirements of the Regional Water Quality Control Board."

In order to ensure that containers have been properly rinsed as directed, the Ventura County Agricultural Commissioner must certify to the Regional Board that such programs exist and are utilized by the pesticide users in the County. Paper or plastic sacks and bags used for pesticide dusts and wettable powders which are empty are suitable for disposal as Group 2 wastes in Class II sites which are protected from flooding per section 2511(a) of Title 22 and where the depth to groundwater is greater than 10 feet. For public health and safety reasons, the local health officer and Agricultural Commissioner may permit pesticide containers used for liquids, dusts, and powders to be disposed of only at supervised disposal sites or under supervised conditions.

VRSD currently permits and inspects pesticide container disposers in conjunction with the County Agricultural Commissioner. All disposers are inspected to ensure that their containers are properly rinsed. VRSD procedures for disposing of empty pesticide containers and a copy of the VRSD permit application forms are provided in Figures IX-2 and IX-3.

o Unrinsed Containers

Pesticides and unrinsed pesticide containers are currently being disposed of in Class I landfills. Large empty, unrinsed containers of 28 gallons or more can be reconditioned by an approved licensed pesticide container reconditioner; however, there are no licensed pesticide container reconditioners in Ventura County.

9.5 PESTICIDE WASTE MANAGEMENT ALTERNATIVES

A. Landfill

Class I landfills located in Santa Barbara County (Casmalia) and Los Angeles County (B.K.K.) are being used for disposal of pesticide waste generated from Ventura County. The Toland Road Class II Landfill is presently being used for disposal of properly rinsed pesticide containers.

B. Incineration

According to Environmental Protection Agency regulations promulgated under the Resource Conservation and Recovery Act (RCRA) and the Federal Insecticide Fungicide, Rodenticide Act (FIFRA), incineration is an efficient and first choice method for the disposal of pesticide waste. Incineration units must be capable of attaining 900°C or 1652°F and must

have proper air pollution control equipment (Reference IX-12). An incinerator capable of destroying pesticides and other hazardous waste materials is currently being studied for the Southern California region by the State and the Southern California Association of Governments (Reference IX-5).

C. Wet Air Oxidation

A wet air oxidation system capable of destroying waste pesticides (e.g., cyanides) is available for use at the B.K.K. Landfill. A second wet air oxidation system is being planned for use at Casmalia. Pesticide waste generated in Ventura County amenable to destruction by the wet air oxidation method can be disposed of at these facilities.

D. Return to Supplier

Some pesticide distributors and dealers will accept return of unused pesticides under warranty that have been sold by them. Prior to returning any unused pesticides, the distributor or dealer from which the materials were purchased must be contacted. If repackaging and shipping is required, Department of Transportation (DOT) regulations must be followed. Railroad and freight lines can provide pertinent information on packaging.

E. Chemical Treatment

Some pesticides can be degraded, neutralized, or disposed of by using chemical methods (reference XII-13). Prior to using any chemical treatment method, the County Agricultural Commissioner, chemical supplier or manufacturer should be contacted concerning chemical treatment methods. Chemical treatment methods should only be used in accordance with label directions.

F. Pesticide Collection and Transfer Facility

A pesticide collection and transfer facility is an interim drop off point for small quantities of pesticides generated by homeowners and small industries throughout Ventura County. At such a facility, waste pesticides would be manifested, labeled, inventoried, segregated, repackaged, collected and then transported to either an approved Class I disposal site or treatment facility. Such a facility should be combined within a small hazardous waste transfer facility and would reduce the cost of transporting smaller loads of pesticide wastes to Casmalia or B.K.K., which are approximately 100 miles away. However, prior to initiating a collection system and establishing a pesticide waste transfer facility, a survey of potential users must be initiated by VRSD in cooperation with the County Agricultural Commissioner's Office, to determine if such facility is warranted. If such a facility is proven to be needed, specific facility design parameters, and suitable potential locations would need to be determined. In addition, basic information will be required as to the types, conditions, quantities and types of pesticides that are currently being stored that would require handling at the facility.

9.6 SPILL CLEAN UP AND EMERGENCY RESPONSE

Pesticide spills by commercial applicators are to be reported to the County Environmental Health Division and the County Agricultural Commissioner's

Office in accordance with California Administrative Code, Title 3. Some pesticide chemical manufacturers and distributors, such as Western Farm Supply, Inc. in Oxnard, maintain trained pesticide spill emergency response teams (Reference IX-14).

9.7 FINDINGS

- A. Commercial application of pesticides is regulated by law; however, the homeowner is exempt. It appears that education of the homeowner at the point of sale regarding appropriate purchase, safe use, and safe disposal of pesticide waste is necessary.
- B. The cumulative effect of storage, and possibly unsafe disposal of pesticides by homeowners, is unknown.

9.8 RECOMMENDATIONS

A. Pesticide Survey

Determine the quantities of pesticide waste generated, types of waste, frequency of generation and need for a small volume homeowner pesticide waste collection and transfer facility.

Responsible agencies: VRSD*, and the County Agricultural Commissioner will prepare, conduct and accomplish a homeowner pesticide waste generation and disposal survey.

Estimated Resources Required: It is estimated that approximately two person months would be required to conduct a Countywide survey.

Schedule: Short term planning period.

* Indicates the lead agency

CHAPTER X - INFECTIOUS WASTES MANAGEMENT

10.1 INTRODUCTION

This chapter addresses infectious waste, which is defined as potentially disease producing waste generated from hospitals and other medical facilities within Ventura County. This chapter also describes current procedures for handling, storing, treating, transporting and disposing of infectious wastes within Ventura County. This chapter also contains an analysis of current procedures, and an assessment of alternatives for handling and disposing of infectious waste, along with recommendations for implementation.

During 1981 and 1982, a rash of illegal infectious waste disposal incidents occurred in many Southern California Counties due to the implementation of tighter air emission control requirements which resulted in the closing of many hospital incinerators (References X-1, 2, 3, 4). Violations ranged from nonpermitted haulers transporting infectious waste to landfills in Los Angeles County, to infectious waste being inadvertently placed together with other solid waste and dumped in Orange County landfills. The wave of illegal dumping resulted in fines being imposed and surveillance programs being initiated at many Southern California County landfills. Also, landfill workers in many counties were trained to detect illegal disposal of medical waste (Reference X-4).

The major problem may have stemmed from the phasing out and closing of individual medical facility incinerators. As a result, many medical facilities could no longer provide adequately for infectious waste treatment and disposal. However, in Ventura County plans had been implemented by the Environmental Health Division in the mid-1970s that required the smaller facilities to develop mutual agreements to transfer their infectious waste to approved facilities at larger hospitals that were adequately prepared to handle infectious waste. Therefore, the illegal disposal problems facing other Southern California Counties did not occur within Ventura County.

According to State Department of Health Services (DOHS) regulations (California Administrative Code Title 22), all infectious medical waste must be burned in approved incinerators that meet Air Pollution Control District (APCD) requirements. However, autoclaving (sterilizing) infectious waste prior to landfilling is an alternative method of disposal if approval is obtained from the County's Health Officer.

10.2 PROPOSED NEW REGULATIONS

In September 1982, the State Legislature passed Senate Bill 1482 (Doolittle). This Bill was enacted as an emergency legislation measure, and required the State Department of Health Services to develop and adopt emergency regulations for the management of infectious waste as a hazardous waste (Reference X-5). However, infectious waste differs from most other hazardous waste in that infectious waste has a short infectious or hazardous life, and usually requires a living host or specific substrate to survive. The following is a summary of these new regulations as proposed by the DOHS. Comments concerning these proposed regulations can be directed to the Department of Health Services, in Sacramento, CA. The DOHS Hazardous Waste Management branch (HWMB) proposes to adopt regulations by revising California

Administrative Code Title 22. It is not known when these proposed regulations will be implemented. However, if they are implemented they will broaden local enforcement agency responsibilities and incorporate new policies and provisions (Reference X-6) as follows:

Enforcement

- o The local Health Officer will be authorized to enforce any aspect of the infectious waste regulations.

Producers

- o New requirements for storage of infectious waste will provide for compliance by six categories of licensed health care facilities. These regulations will cover convalescent facilities and medical groups.
- o These regulations will cover any producer of more than 100 kilograms of infectious waste per month.

Hauler Registration

- o Haulers of infectious waste will need to be registered as a hazardous waste hauler with the State Hazardous Waste Management Board.
- o Registration will not be required for small quantity generators hauling amounts less than or equal to 100 kilograms a month of their own waste.

Permits

- o Hazardous waste facility permits issued by the Hazardous Waste Management Branch of DOHS will be required for off-site treatment, storage, and disposal facilities with the exception of Class II landfills. Class II landfills will need to adhere to an operating plan for the disposal of infectious waste approved by Ventura County's Health Officer. Producers of infectious waste that autoclave or incinerate their waste onsite will need to obtain a facility permit.
- o Hazardous waste permits will not be required for crematoriums or cemeteries.
- o Methods other than incineration (i.e. autoclaving) will need to be approved by the local Health Officer.

Manifest

- o Manifest will not be required for infectious waste haulers, producers or disposal facilities. This section of the proposed regulations differs from current regulations covering other categories of hazardous waste. However, infectious waste haulers under contract have been voluntarily using manifests for their waste in Ventura County.

Inspection/Monitoring

- o Registered haulers will need to have an annual inspection of their vehicles.

- o Off-site facilities operating under a permit issued by the Hazardous Waste Management Branch of DOHS will be monitored under mutual agreement by the local health department.
- o Disposal operations conducted at onsite treatment facilities or at Class II landfills will be inspected by the local health department upon mutual agreement with DOHS.

Fees

- o Costs accrued by local health departments for implementing these new regulations may be recovered through existing local fee levying authority.

These regulations are currently in draft form, and it is not known when they will be implemented (References X-7 and X-10).

10.3 DESCRIPTION OF THE EXISTING INFECTIOUS WASTE MANAGEMENT SYSTEM IN VENTURA COUNTY

According to the Ventura County Medical Society, in 1983 there were 911 licensed physicians in the County. In addition, there are approximately 71 medical groups and medical corporations, and 12 private general acute care hospitals in Ventura County. One hospital is operated by the State which is the State hospital at Camarillo. There are 7 clinics, 17 skilled nursing facilities, one renal dialysis clinic and one privately run acute psychiatric hospital within Ventura County. All hospitals and clinics in Ventura County that generate infectious waste require an annual inspection conducted by the Ventura County Public Health Sanitarians. These medical facilities also require certification of infectious waste disposal procedures. With the advent of the new regulations, skilled nursing facilities may also be required to have annual inspections (Reference X-7). In addition, all hospitals and clinics in Ventura County that generate infectious waste are required to have an approved infectious waste handling procedures plan indicating persons responsible for waste handling, waste storage, and treatment within the medical facility, including biological spore monitoring, testing and disposal.

A. Waste Management Options

Medical facilities manage infectious waste basically by one of the following methods:

o On-site

Some institutions (Pleasant Valley Hospital, Los Robles Hospital, St. Johns and Port Hueneme Adventist Hospital) which generate infectious waste, sterilize their infectious waste on-site using an autoclave after placing the waste in red double bags and disposing of the now non-infectious waste at a Class II landfill within the County.

o Off-site

The large medical facilities in Ventura County currently contract for waste disposal at off-site locations. The contractor is a licensed infectious waste hauler, who transports the waste to an off-site facility where it is incinerated or autoclaved. Licensed crematoriums

within Ventura County are currently used for disposal of infectious waste such as body parts, and local cemeteries are used for internment as appropriate. In addition, some infectious waste can be discharged to the sewage system. For more information concerning this option, refer to Section 11.3.2.4 of this chapter, and contact the local sewerage authority.

B. Current Requirements

Current federal and state laws and regulations consider violations of standards for safe handling and disposal of infectious waste to be very serious. Some major violations may lead to criminal proceedings carrying penalties of up to \$25,000 per day. Therefore, it is essential that each facility develop internal procedures to control infectious waste and meet all infectious waste regulations. Ultimate legal responsibility for the safe handling and disposal of infectious waste lies with the facility generating the waste, regardless of subsequent contractors who haul or dispose of the waste. Therefore, a responsible representative of the institutes governing body is required to sign and certify the correctness of infectious waste handling and disposal procedures and policies. The approved infectious waste procedures plan must then be provided to the Ventura County Health Officer for approval prior to certification. In addition, all infectious waste generated at medical facilities must be handled, stored, treated and disposed of in accordance with the Ventura County Policy Guidelines for disposal of infectious waste. This policy guideline is currently being revised by the County Environmental Health Division.

1. Storage

o Containers

Bags used for infectious waste must be strong enough not to burst, rip, or tear with normal use and handling. The red bags must pass the 165 gram dropped dart impact resistance test (ASTM Standard D1709-75).

Hypodermic needles, syringes, or other sharp instruments which have been rendered unfit for reuse but which have not been processed to make them incapable of puncturing or cutting, must be placed in rigid puncture proof containers (i.e., fiber board, plastic cartons or metal cans) which are either taped closed or have tight-fitting lids to prevent opening.

All red double plastic bags must be enclosed in approved rigid containers (i.e. plastic drum with a tight-fitting lid). All containers must be labeled or identified, using the word "infectious waste" or "biohazard," and the international symbol for biohazard (refer to Figure X-1). The container must be identified as to the generating medical facility from which it came.

Red bags are not to be used for materials previously classed as infectious waste that have been adequately sterilized. Compactors or grinders are not to be used to reduce the volume of infectious waste unless the waste has first been rendered non-infectious (i.e., sterilization). Infectious waste in red double bags or other containers may not be stored in stationary or mobile compactors.

o Storage Rooms

All medical facilities that generate infectious waste must have a storage room which meets the provisions of Title 22 of the California Administrative Code. These facilities must provide an area for storing containerized infectious waste awaiting disposal. The maximum length of storage prior to disposal is four days unless the waste is refrigerated. Storage rooms must be covered and screened to provide protection from vermin, rain and wind. The room must be locked or secured to prevent unauthorized entry. The storage room must have warning signs stating "Caution - infectious waste storage area. unauthorized persons keep out," and "Cuidado - Zona de residuos infectados prohibida la entrada a personas no autorizadas." The storage room should also have sloped floors, curbing and cleaning equipment. Whenever a floor drain is required in an infectious waste storage room, coordination and contact with local sewerage agencies and must be provided. Storage rooms must be maintained in a manner which will not contribute to disease transmission, vector breeding, and creation of nuisances.

2. Transportation

Vehicles used for transporting infectious waste must be completely closed and leakproof. Vehicles used must have damage resistant access, and secure doors or other closures to prevent unauthorized access or accidental opening.

The vehicle's driver compartment must be sealed, and separated from the infectious waste material storage compartment. The driver and/or handlers must be provided with, and are required to wear, protective clothing (i.e., coveralls, gloves) while handling or transporting infectious waste. Required clothing is to be provided by the disposal or hauling contractor, and must be used and changed daily. All handlers are to be provided with instructions for self decontamination if infectious waste should accidentally come in contact with body surfaces. The driver and handlers must be instructed in the proper use of disinfectants, which are provided for cleaning and disinfecting vehicles and containers that may become contaminated.

Surfaces of transport vehicles and reusable containers which have contacted spilled or leaked infectious waste must be cleaned and decontaminated by using any of the following approved disinfectants and methods: agitation to remove visible soils combined with exposure to hot water (82°C or 180°F) for a minimum of 15 seconds, exposure to chemical sanitizers such as hypochlorite solution with 200 parts per million available chlorine, combination of chlorine bromine solution with 100 parts per million available chlorine, iodoform or iodine solution with 25 parts per million available iodine, or other sanitizers for 30 seconds as approved by the Ventura County Health Officer. All infectious waste leaks or spills must be cleaned up and the materials properly disposed of. The wastes from spills are not to be discharged to storm drains.

Transport vehicles are to be identified (i.e., labeled) on both sides of exterior panels, and on the rear with contrasting colored signs or decals of sufficient size to be clearly visible with the words "infectious waste" or "biohazard" and the international symbol for biohazardous waste materials. In addition, the name and telephone number of the hauling company and the owner's name and telephone number must be clearly printed on the driver's side door exterior panel along with the legend in the event of accident or spillage notify the local health officer immediately.

Infectious waste must only be transported to facilities that have been approved and permitted for the handling, transferring or disposal of infectious waste.

3. Treatment

Infectious waste can be rendered non-infectious by properly sterilizing the waste in a steam autoclave (sterilizer) at 121°C for 30 minutes (Reference X-8). Special autoclaving conditions exceeding these minimums may be required by the County's Environmental Health Officer for sterilizing virus, spore or fungi contaminated medical waste (Reference X-8).

Infectious waste, such as surgical dressings, may be placed in heat resistant impervious bags, autoclaved to the point of sterility, tagged as having been autoclaved and then disposed of in the same manner as non-infectious waste. Bags used in the sterilization process must have a thermal indicator attached to verify that autoclaving has occurred. Gas sterilization or other methods may be permitted if adequate controls are used to insure complete sterilization.

A log must be maintained of each load of infectious waste autoclaved, indicating date, time, temperature, and pressure reached and the name of the person doing the autoclaving. County Environmental Health Division Sanitarians periodically inspect and verify that proper treatment procedures are being followed.

4. Disposal

State regulations currently require that infectious waste be treated in an approved incinerator which can provide complete combustion of the infectious waste. However, the Ventura County Health Officer or his appointed representative can authorize two alternative methods of disposal, subject to written application and approval for each facility. Those alternatives are as follows:

- o Transportation to Air Pollution Control District approved incinerator.
- o Transportation to a Class II sanitary landfill for disposal after onsite sterilization by autoclaving.

In addition the following, waste can be discharged to the sewerage system through approved facilities: (Note: Sewered waste by definition is not solid waste and is outside the jurisdiction of this Plan. Waste discharges to sewerage systems should be approved by local sewerage authorities.)

- o Waste consisting of flows from lavatories, water closets, wash tubs, showers and other sanitary waste required by building codes to be connected to the sewer facility.
- o Wet organic materials such as kitchen waste from food preparation, unused food from serving vessels and similar waste (excluding plastic or paper disposable food service items such as plates, cups, trays, liners and eating utensils) if satisfactorily ground.
- o After sterilization, hypodermic needles, syringes, and associated articles which should not fall into the hands of juveniles following their use. They can be pulverized through an approved grinding device. However, local sewerage authorities may require an industrial waste discharge permit if wastes are discharged to the sewerage system.

10.4 ASSESSMENT OF THE EXISTING INFECTIOUS WASTE MANAGEMENT SYSTEM

In order to adequately assess the existing infectious waste management system in Ventura County, a review of past medical facility inspections was conducted by staff (Table X-1). In addition, general information concerning the types of waste generated, disposal methods, and amounts of infectious waste produced, was compiled from applications for medical waste disposal certification submitted to the Ventura County Health Officer Environmental Health Division. From these records it was ascertained that approximately 171.2 tons of infectious waste is generated annually from medical facilities within Ventura County (Table X-2). Data gathered and compiled from County records was analyzed on a facility classification basis as follows:

A. General Acute Care Facilities

There are 12 general acute care facilities (hospitals) in Ventura County. Eleven of these facilities are inspected by the Ventura County Health Officer. One, the State Hospital at Camarillo, is under the inspection authority of the State Department of Health Services. Considering the last inspections performed by the County's Health Officer at 11 of the general acute care facilities, a total of only 10 infractions were reported, from all facilities. These violations mainly concerned the need for better labelling of infectious waste storage areas and containers, and use of appropriate backflow prevention devices (Table X-1). Over half of the facilities inspected had no infractions reported. General acute care facilities generate approximately 151.8 tons of infectious waste annually in Ventura County. These facilities account for approximately 83.2% of the total amount of infectious waste generated in the County (Figure X-2). Eight of these facilities dispose of their infectious waste through a licensed contractor (W.D. Bingham, Inc., located in Huntington Beach, California). Four facilities dispose of their infectious waste by using onsite steam autoclaves, thereby making the waste noninfectious prior to disposing of it in a Class II landfill.

Most such facilities in the County dispose of tissue culture media, laboratory specimens, diapers, liquid waste, needles, syringes and disposable fomites (inanimate objects such as dressings, and bandages). At most medical facilities infectious wastes are collected at least 2 to 3 times a week; however, a few facilities have infectious waste pickup on a daily basis.

Medical facilities utilizing contractor disposal services are provided special containers which are sanitized by the contractor upon pickup. The contractor uses a sealed leakproof vehicle to transport infectious waste to its disposal facility where it is thermally destructed. Infectious waste is stored in sealed, locked storage areas that are properly labeled infectious waste or biohazardous waste. Infectious waste is placed in red double bags prior to disposal. All other containers are cleaned regularly using an approved sanitizer or disinfectant.

TABLE X-1

HEALTH CARE FACILITIES INSPECTION SUMMARY

<u>Description of Violation</u>	<u>Number of Violations</u>
1. All infectious wastes adequately separated from regular Solid wastes	(1)
2. Storage area:	()
a. Location	(3)
b. vector control measures	()
c. general cleanliness	()
d. security measures	()
3. Cleaning facilities:	()
a. drainage	(1)
b. water supply appurtenances and disinfectants	()
c. backflow prevention devices	(2)
4. Movable bins and garbage cans:	()
a. construction	()
b. maintenance	()
c. putrecible waste handling and disposal frequency	(1)
5. Needle and syringe distruction:	()
6. Infectious waste collection bags and containers:	()
a. double bagging, standard colors and thickness	()
b. puncture-proof needle containers	(2)
c. Collection cans and carts	()
d. collection area security	()
7. Autoclave monitoring and operation:	(2)
a. operating procedures posted	()
b. daily records and temperature chart files	()
c. monthly bacteriologic tests and record files	(1)
8. Infectious waste collection and disposal procedures available to all personnel	()
9. Infections waste identified as biohazardous at all states of the disposal process	()
10. All wastes defined as infectious disposed of through an approved process	(1)

- 11. Storage areas: ()
 - a. container construction and maintenance ()
 - b. clean-up facilities and drainage ()
 - c. backflow prevention devices (1)
 - d. vector control measures (2)
 - e. security precautions (2)
 - f. location and exhaust ventilation ()
- 12. Transportation vehicle: ()
 - a. construction ()
 - b. labeling ()
 - c. containers ()
 - d. maintenance ()

SOURCE: Ventura County Environmental Health Division, 1982

B. Nursing Facilities

There are 17 skilled nursing facilities in Ventura County at the present time. Most are convaloriums which generate approximately 18.77 tons of infectious waste annually and account for 12% of the total amount of infectious waste generated in Ventura County (Figure X-1).

New regulations drafted by the Department of Health Services (DOHS) may require the County Health Officer to inspect skilled nursing facilities on a regular basis (California Administrative Code Title 22). These facilities are not presently required to be inspected annually. These new regulations will place a heavier workload on the County's Health Inspectors, and may require additional staffing.

Infectious waste disposed of by skilled nursing facilities is composed of disposable fomites, needles, syringes, bandages and tubing. Twelve of these medical facilities dispose of their waste through a licensed contractor. One operates an autoclave onsite for treating waste prior to disposal in a Class II landfill, and 5 facilities reported that they do not generate infectious waste at their facilities. In addition, 4 small skilled nursing facilities have agreements with larger general acute care facilities for disposing of their infectious waste (Table X-3).

Since the health officer is not required to conduct repeat inspections at these skilled nursing facilities, only 11 of the 17 facilities have been inspected. Of the facilities inspected, 14 minor infractions were noted by the inspector at 8 facilities. These minor infractions range from the need to use a suitable red colored bag of proper thickness for storing infectious waste to the need to maintain better records on autoclaving procedures. Since many of the skilled nursing facilities were inspected a number of years ago, it is difficult to say whether or not these infractions have been corrected.

C. Renal Care Facilities

There is only one renal care facility (kidney dialysis unit) which has 16 dialysis stations in Ventura County. This is the Conejo Valley Renal Center in Thousand Oaks. This facility was inspected in 1982 and no infractions were noted.

This facility generates approximately 7.6 tons of infectious waste annually which accounts for 4.4% of the total amount of infectious waste generated in Ventura County (Figure X-2 and Table X-2). This facility disposes of needles, syringes, along with artificial kidneys. All infectious waste from this facility is disposed of by a licensed contractor (Table X-3).

Figure X-1
BIOHAZARD SYMBOL

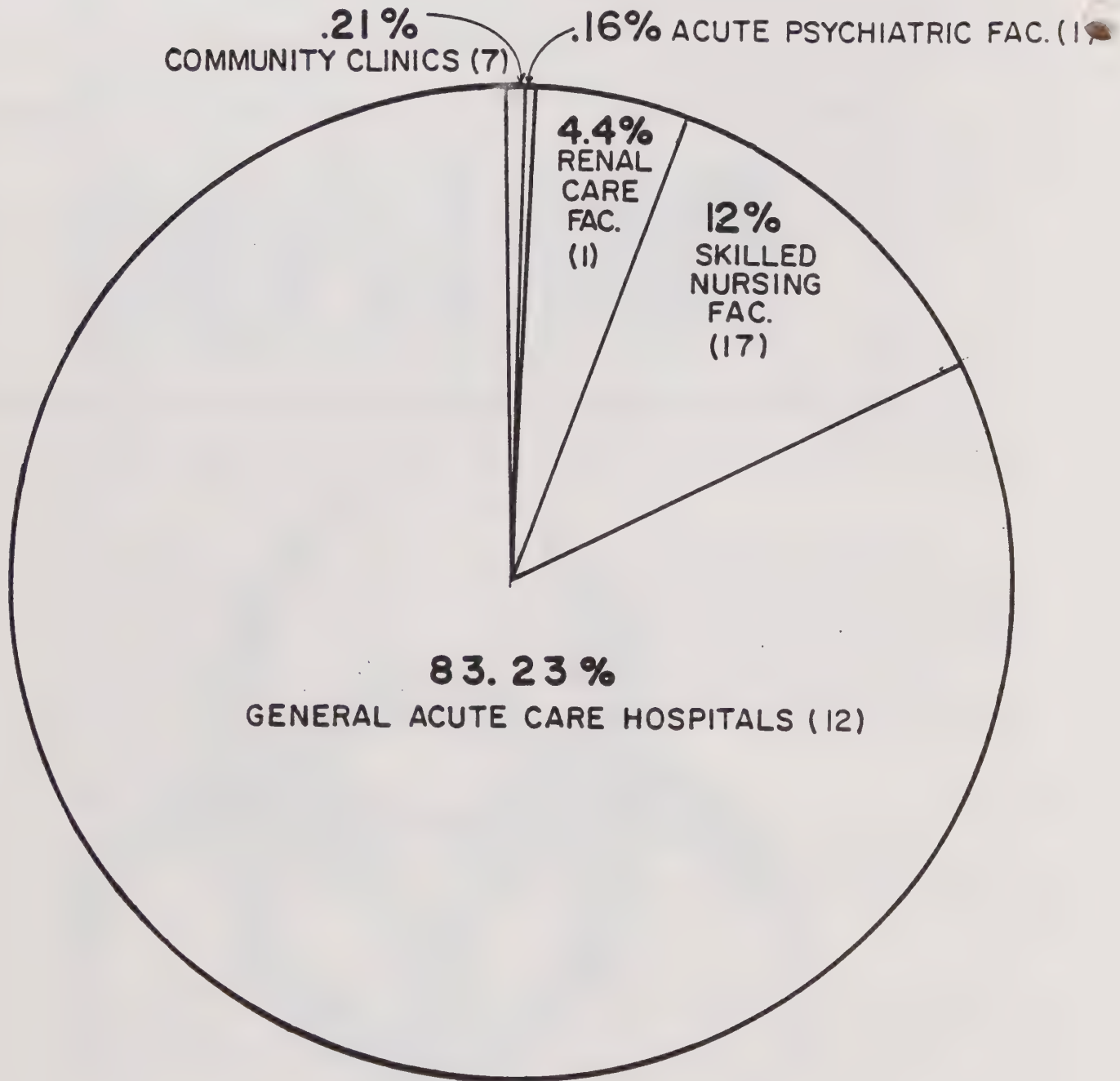
BIOHAZARD



SOURCE: VENTURA COUNTY ENVIRONMENTAL HEALTH DIVISION 1983

FIGURE X - 2

*PERCENT INFECTIOUS WASTE GENERATED
BY FACILITY CLASSIFICATION



SOURCE: COUNTY ENVIRONMENTAL HEALTH DIVISION 1982

235 * NOTE: 100 % EQUALS 171.2 TONS OF INFECTIOUS WASTE GENERATED BY FACILITIES
REPORTING TO OR INSPECTED BY THE COUNTY'S ENVIRONMENTAL HEALTH DIVISION.

TABLE X-2

SUMMARY OF INFECTIOUS WASTE
GENERATED BY FACILITY CLASSIFICATION

A. GENERAL ACUTE CARE HOSPITALS

1. Number of facilities = 12
2. Number of beds = 1,565
3. Infectious waste generated
pounds per year = 303,640
tons per year = 151.82
percent of total infectious
waste generated = 83.23

B. SKILLED NURSING FACILITIES

1. Number of facilities = 17
2. Number of beds = 913
3. Infectious waste generated
pounds per year = 37,544
tons per year = 18.77
percent of total infectious
waste generated = 12%

C. RENAL CARE FACILITIES DIALYSIS CLINICS

1. Number of facilities = 1
2. number of beds = 16 (dialysis stations)
3. Infectious waste generated
pounds per year = 15,600
tons per year = 7.8
percent of total waste
generated = 4.4%

D. CLINICS

1. Number of total facilities = 7
2. Number of beds = not applicable - outpatient care only
3. Infectious waste generated
pounds per year = 714
tons per year = .36
percent of total infectious
waste generated = .21%

TABLE X-2 (Cont'd)

E. ACUTE PSYCHIATRIC CARE

1. Number of total facilities = 1
2. Number of beds = 37
3. Infectious waste generated
pounds per year = 520
tons per year = .26
percent of total infectious
waste generated = .16%

TOTAL: 179.01 tons (This only represents the total amount of infectious waste from facilities reporting to or inspected by the Ventura County Environmental Health Division.)

SOURCE: VENTURA COUNTY ENVIRONMENTAL HEALTH DIVISION, 1982

TABLE X-3

INFECTIOUS WASTE MANAGEMENT DATA FOR
VENTURA COUNTY MEDICAL FACILITIES

A.	<u>GENERAL ACUTE CARE FACILITIES</u>	<u>WASTES</u>	<u>DISPOSAL METHOD</u>	<u>QUANTITY POUNDS/YR.</u>
1.	Camarillo State Hospital	ND	Thermal Destruction (Contractor)	52,000
2.	Community Memorial Hospital, Loma Vista and Brent Streets Ventura, CA	.Culture Media .Diapers .Disposable Fomites .Laboratory Specimens .Liquid Wastes .Needles & Syringes .Tissues	Thermal Destruction (Contractor)	6,240
3.	Los Robles Hospital 215 W. Janss Road Thousand Oaks, CA	.Culture Media .Diapers .Disposable Fomites .Laboratory Specimens .Liquid Wastes .Needles, Syringes .Tissues	On-site Thermal Destruction	91,000
4.	Ojai Valley Hospital 1306 Maricopa Hwy. Ojai, CA	.Culturemedia .Diapers .Disposaable fomites .Laboratory specimens .Liquid wastes .Needles, syringes .Tissues	Thermal Des- truction (licensed contractor)	3,120
5.	Oxnard Community Hospital 540 Hobson Way Oxnard, CA	.Culture media .Disposable fomites .Liquid wastes .Needles, syringes .Tissues	Thermal Des- truction (licensed contractor)	2,000
6.	Pleasant Valley Hospital 209 Antonio St. Camarillo, CA	.Culture media .Diapers .Disposable fomites .Liquid wastes .Needles, syringes .Tissues	Autoclave (on site)	15,600

7.	Port Hueneme Adventist Hospital 307 E. Clara St. Port Hueneme, CA	.Culture media .Diapers .Disposable fomites .Laboratory specimens .Needles, syringes	Autoclave (on site)	4,680
8.	Santa Paula Memorial Hospital 825 N. 10th St. Santa Paula, CA	.Culture media .Disposable fomites .Laboratory speci- .Needles, syringes .Tissues .Dressings	Thermal des- truction (licensed contractor)	15,600
9.	Simi Valley Adventist Hospital 2975 Sycamore Dr. Simi Valley, CA	.Diapers .Disposable fomites .Laboratory specimens .Needles, syringes .Tissues	Thermal des- truction (licensed contractor)	31,200
10.	Simi Valley Community Hospital 1575 Erringer Rd. Simi Valley, CA	.Culture media .Laboratory specimens .Diapers .Disposable fomites .Liquid wastes .Needles, syringes .Tissues	Thermal des- truction (licensed contractor) Cemetery, crematorium crematorium	5,200
11.	St. Johns Hospital 333 N. "F" St. Oxnard, CA	.Culture media .Disposable fomites .Laboratory specimens .Liquid wastes .Needles, syringes	Autoclave (on site)	52,000
12.	Ventura County General Hospital 3291 Loma Vista Rd. Ventura, CA	.Culture media .Disposable fomites .Laboratory specimens .Needles, syringes .Tissues	Thermal des- truction (licensed contractor)	25,000
			TOTAL:	<u>303,640</u>

B.	<u>SKILLED NURSING FACILITIES</u>	<u>WASTES</u>	<u>DISPOSAL METHOD</u>	<u>QUANTITY (POUNDS/YR.)</u>
1.	Acacias NRTA and Nursing Home 601 N. Montgomery Ave. Ojai, CA	.Diapers .Needles, syringes	Thermal des- (licensed contractor)	5,200
2.	California Convalescent Hospital 4020 Loma Vista Ventura, CA	.Needles, syringes .Bandages, dressings	Thermal des- truction (licensed contractor)	5,200
3.	Camarillo Convalescent Hospital 205 Granada St. Camarillo, CA	.Disposable fomites .Needles, syringes	Thermal des- truction (licensed contractor)	9,100
4.	Fillmore Convalescent 118 "B" St. Fillmore, CA	.Needles, syringes .Dressings		260
5.	Glen Wood Convalescent Hospital 1300 N. "C" St. Oxnard, CA	.Needles, syringes .Disposable instruments	Thermal des- truction (licensed contractor)	1,040
6.	Mary Health of the Sick 2929 Theresa Dr. Newbury Park, CA	.Needles, syringes .Disposable instruments	Thermal des- truction (licensed contractor)	1,040
7.	May Wood Acres Health Care 2641 So. "C" St. Oxnard, CA	.Disposable fomites .Needles, syringes .Dressings	Thermal des- truction (licensed contractor)	5,200
8.	Ojai Manor Con- valescent Hospital 1306 Maricopa Hwy. Ojai, CA	.Disposable fomites .Needles, syringes	Thermal des- truction (licensed contractor)	2,600
9.	Oxnard Manor Con- valescent Hospital 1400 W. Gonzales Oxnard, CA	.Needles, syringes	Thermal des- truction (licensed contractor)	104
10.	Pleasant Valley Rehabilitation and Convalescent Hospital 5225 So. "J" St. Oxnard, CA	.Disposable fomites .Needles, syringes	Thermal des- truction (licensed contractor)	1,300

- | | | | | |
|-----|---|---|--|-------|
| 11. | St. Joseph Convalescent Hospital
P. O. Box 98
2464 East Ojai Ave.
Ojai, CA | .Disposable fomites
.Needles, syringes
.Bandages, tubing
.Urine bags | Thermal destruction
(licensed contractor) | 6,500 |
| 12. | Santa Paula Health Care Facility
Main Street
Santa Paula, CA | (No infectious waste generated) | | |
| 13. | Thousand Oaks Convalescent
930 W. Avenida de Los Arboles
Thousand Oaks, CA | .Disposable
.Needles, syringes
.Urine bags
.Bandages, tubing | (No infectious fomites waste generated) | |
| 14. | Twin Pines Healthcare
250 March St.
Santa Paula, CA | (No infectious waste generated) | | |
| 15. | Ventura Convalescent Hospital
4904 Telegraph Rd.
Ventura, CA | (No infectious waste generated) | | |
| 16. | Ventura Estates Health Manor
915 Estates Drive
Newbury Park, CA | (No infectious waste generated) | | |
| 17. | Valley Vista Convalescent Home
5270 Los Angeles Ave.
Simi Valley, CA | (No infectious waste generated) | | |

C. RENAL CARE CLINICS

- | | | | | |
|----|---|---|--|--------|
| 1. | Conejo Valley Renal Center
227 W. Janss Rd.
Thousand Oaks, CA | .Needles, syringes
.Artificial kidneys | Thermal destruction
(licensed contractor) | 15,600 |
|----|---|---|--|--------|

D. ACUTE PSYCHIATRIC FACILITIES

- | | | | | |
|----|---|---|--|-----|
| 1. | Raleigh Hills Hospital
2130 N. Ventura Rd.
Oxnard, CA | .Laboratory specimens
.Needles, syringes | Thermal destruction
(licensed contractor) | 520 |
|----|---|---|--|-----|

E. CLINICS

WASTES

DISPOSAL METHOD

QUANTITY
(Pounds/Yr)

- | | | | | |
|----|---|---|--|-----|
| 1. | Clinica De La Comunidad De Oxnard
3825 Saviers Rd.
Oxnard, CA | .Disposable Fomites
.Needles, syringes | Agreement with St. Johns Hospital for disposal | 260 |
|----|---|---|--|-----|

2.	Conejo Community Service Center 1429 Thousand Oaks Blvd. Thousand Oaks, CA	.Disposable fomites .Needles, syringes	Agreement with Los Robles Hospital for disposal	180
3.	Naval Clinic NCBC Port Hueneme	.Disposable fomites .Needles, syringes .Laboratory specimens	Thermal des- truction (licensed contractor)	250
4.	Ojai Country Clinic 1434 E. Ojai Ave. Ojai, California	.Disposable fomites .Needles, syringes .Laboratory specimens	Thermal des- truction (licensed contractor)	6
5.	Piru Neighborhood 703 N. Main St. Piru, California	.Disposable fomites .Needles, syringes .Laboratory specimens	Thermal des- truction (licensed contractor) or autoclave	6
6.	Simi Valley Community Hospital 2060 Tapo St. Simi Valley, CA	.Syringes, needles .Used petri dishes	Agreement with Doctors Hospital in Simi Valley	6
7.	Ventura Community Clinic 700 E. Santa Clara Ventura, CA	.Disposable fomites .Needles, syringes .Laboratory specimens	Thermal des- truction (licensed contractor) or autoclave	6
Total Pounds				358,018

SOURCE: Ventura County, Environmental Health Division 1983
 (Based on Environmental Health Division records for
 facilities reporting to or inspected by the County.)
 * ND - no data available

D. Clinics

There are 7 clinics in Ventura County (Table X-3). Only 0.357 tons of infectious waste is generated from these facilities annually which is only 0.14% of the total amount of infectious waste generated in Ventura County annually (Figure X-1 in Table X-2). Since these clinics operate solely on an outpatient basis, infectious waste generated from these facilities is small in quantity and basically includes disposable petri dishes, disposable fomites, needles and syringes. Three clinics have agreements with nearby general acute care hospitals to provide for disposal of their infectious waste. Upon last inspection only 1 minor infraction was noted at one facility. This infraction related to the need for better identification (labeling) of waste generated.

E. Acute Psychiatric Care Facilities

In Ventura County there is 1 acute psychiatric care facility, RaliegH Hills Hospital, under the inspection authority of the Ventura County Health Officer. This facility produces approximately $\frac{1}{2}$ ton of infectious waste a year, which is composed of laboratory specimens, needles and syringes. This hospital accounts for only 0.16% of the total amount of infectious waste generated in the County. Waste from this medical facility is disposed of by a licensed contractor. Upon last inspection no infractions were noted at this facility.

F. Veterinary Facilities

There are 29 veterinarians and 21 veterinary hospital facilities located in Ventura County. These facilities do generate infectious waste, but for the most part are considered small generators producing less than 100 kg. of infectious waste a month. Some of these facilities have autoclaves and sterilize their waste on site prior to disposal. However, since data on these facilities is minimal, they will be included in the investigation to be conducted concerning small generators of infectious waste (as described in Section 10.7.4 of this chapter).

10.5 ALTERNATIVES TO THE EXISTING SYSTEM

Basically there are only 2 major methods of managing infectious waste: either on-site at the generating facility, or off-site at a contractor facility or another facility agreeing to handle the infectious waste. There are only 3 disposal methods, one of which, incineration, is approved by the State. Other methods such as autoclaving are alternate methods that must be approved by the County Health Officer. Direct landfilling of infectious waste is allowed in some Counties; however, current Ventura County policy is that only treated, noninfectious waste can be disposed of in Class II landfills.

A. Management Alternatives

There are 2 basic management alternatives for infectious waste:

- o On-site Disposal

Infectious waste can be treated by autoclaving onsite at the medical facility if approved by the Ventura County Health Officer. For the most part, on-site treatment can be accomplished by using either a gas or steam autoclave prior to landfilling the noninfectious waste at an

approved Class II landfill. Some hospitals may operate incineration facilities onsite if approved by both the health officer and the Air Pollution Control District (APCD). However, there is only one approved infectious waste incinerator in Ventura County at this time (Los Robles Hospital).

o Off-site Disposal

Infectious waste can be disposed of or treated off-site, away from the premises of the generating facility. This is mainly accomplished by a licensed contractor who transports the infectious waste to an approved incinerator or treatment facility outside the County. Most medical facilities in Ventura County contract with W.D. Bingham, Inc., located in Huntington Beach, California. This contractor operates a thermal destruction facility. The average cost for contractor disposal is \$0.15 per pound (Reference X-10).

B. Technological Alternatives

1. Incineration

High temperature thermal destruction incinerators are operated mainly by private contractors and some large hospitals within the State. Incineration is the primary method approved by the State Department of Health Services for disposal of infectious waste (Reference X-9). Some large hospitals within the State are now conducting feasibility studies using incinerators coupled with cogeneration. These facilities cost approximately one-half to one million dollars (Reference X-10), and provide a savings to the hospital on their heating bills. This method provides considerable energy savings to hospitals in areas of the State currently achieving attainment status (i.e. where air pollution is not a major problem). The proposed waste to energy plant to be located in Oxnard will have an incinerator for disposal of sludges. It has been proposed by the owner/operator to investigate the incineration of infectious waste at this facility. It may not be appropriate to increase incineration facilities in Ventura County unless all air pollution control standards can be met. However, when considering this alternative, air pollution from vehicles currently transporting infectious waste to out of County facilities should be taken into consideration.

2. Autoclaving

Currently Ventura County's Health Officer can approve autoclaving of infectious waste as an alternative to incineration. Due to the cost of purchasing and operating an autoclave, usually only medium to large size facilities utilize this method. Either gas autoclaves or steam autoclaves can be used, but temperature and time retention must be adequate to ensure proper sterilization prior to disposing of the resultant noninfectious waste at Class II landfills (i.e., Santa Clara, Bailard, Toland Road and Simi Valley).

3. Landfilling

Currently, some Counties have approved landfills for direct disposal of nontreated infectious waste. This method has been found to be expensive, \$0.30 to \$0.40 a pound (Reference XI-10). The high cost is due to requirements for immediate covering of the waste, development of

a special infectious waste site operations plan, and the need to use special fibre board disposal containers (Reference X-10). Current Ventura County policy only allows properly treated autoclaved waste that has been properly sterilized and considered noninfectious, to go to Class II landfills within the County.

10.6 FINDINGS

Basic findings relative to management of infectious waste in Ventura County are as follows:

- o Inspections of Ventura County medical facilities indicate that infectious wastes are being properly managed at all medical facilities under inspection in the County. This indicates that the current inspection and enforcement program conducted by the County's Health Officer is adequate but must be maintained in order to keep the current high degree of compliance.
- o New regulations proposed by the State Department of Health Services may impact current County manpower resources due to the need to provide a larger scope of services and possibly require inspections at a greater number of medical facilities.
- o Approximately 91%, or 155.7 tons, of the measured volume of infectious waste reported to the Environmental Health Division as being generated in Ventura County is currently being transported by a licensed contractor and disposed of outside of Ventura County.
- o Only 9%, or 15.5 tons a year, of infectious waste generated in the County is treated and disposed of at Class II landfills in Ventura County. Only infectious waste from unregulated small generators is currently being disposed of in Ventura County landfills. The quantity of this waste, and any impacts from small generators, has not been determined. Infectious waste from small generators which are unregulated, may pose potential problems at Ventura County landfills. This should be further investigated to determine possible impacts. The County Environmental Health Division will develop and implement a program for training landfill operators and workers in the identification of infectious waste in the event that infectious waste may inadvertently end up at County landfills. This program will be coordinated with VRSD and private landfill operators in the County. There is a continued need for an ongoing training program.

10.7 RECOMMENDATIONS

- A. Develop a Manpower Resources Assessment Based on an Evaluation of New DOHS Infectious Waste Regulations When These Regulations are Implemented.

New Department of Health Services Regulations regarding infectious waste will need to be assessed by the County Health Officer in light of additional County manpower and resources needed to implement these regulations.

Responsible Agency: The needs assessment will be conducted by the County Environmental Health Division.

Estimated Resources Required: Due to these new requirements, an additional health inspector may be needed to provide for enforcement. However a manpower resources assessment will be developed by the County's

Environmental Health Division within the short-term planning period. This assessment may require 2 man weeks to complete.

Schedule: Short term planning period.

B. Develop Infectious Waste Policy and Procedures Plan

The Ventura County Health Officer will develop an updated County infectious waste policy and procedures plan and maintain interagency cooperation between affected agencies.

Responsible Agency: The County agency responsible for developing the updated infectious waste procedures plan is the County's Environmental Health Division.

Estimated Resources Required: It is estimated that a new infectious waste procedures plan would require a full-time sanitarian approximately one man week to develop. This plan should be scheduled to be developed within the short-term planning period.

Schedule: Short term planning period.

C. Develop a Formal Infectious Waste Identification Training Program for Landfill Operators

In order to prevent improper disposal of infectious waste at Ventura County landfills, landfill site operators must be trained in the proper identification of infectious waste.

Responsible Agency: The County Agency responsible for developing an infectious waste training program for landfill operators is the County Environmental Health Division.

Estimated Resource Required: It is estimated that it would take a full time Sanitarian approximately two man weeks to develop and implement a training program. This training program should be developed during the short term planning period.

Schedule: Short term planning period.

D. Investigate and Determine the Environmental and Health Impacts From Small Generators of Infectious Wastes Including Doctors' Offices, Medical Groups, Clinics and Veterinary Facilities

The Ventura County Environmental Health Division will develop, investigate and determine the environmental and health impacts from small generators of infectious waste including a characterization of infectious waste materials generated from doctors' offices, medical groups, clinics and veterinary facilities.

Responsible Agency: The County Agency responsible for conducting this investigation is the Environmental Health Department.

Estimated Resources Required: It is estimated that it would take a full time sanitarian approximately two man weeks to develop a survey of small infectious waste generators, and estimate the impacts from these sources. This investigation should be scheduled for the short term planning period.

Schedule: Short and mid-term planning period.

E. Investigate the Potential for Disposing of Infectious Waste at the Incineration Facility to be Installed at the Proposed Waste to Energy Plant in Oxnard

An incineration facility is to be installed and operated at the proposed waste to energy plant. The possibility of utilizing this facility to dispose of infectious waste from Ventura County sources must be investigated.

Responsible Agencies: Coordination of this investigation will need to be provided by the Environmental Health Division*, APCD, Planning Division and the permit applicant.

Estimated Resources Required: Since the owner/operator of the facility has proposed this alternative to the County Environmental Health Division, this should be investigated and assessed further as part of the permit process. Therefore, no additional manpower is required. This task will be completed during the short and mid-term planning period.

Schedule: Short term planning period.

* Indicates the lead agency

10.8 DEFINITIONS

1. Clinics - Health care facilities providing diagnosis, treatment or care, to patients not confined to the facility as inpatients. Care in clinics may include, but not be limited to, the provision of medical, surgical, dental, mental health, rehabilitation, podiatric, optometry or chiropractic services. Clinics are classified as (1) community (2) teaching and research (3) employers (4) employees (5) surgical (6) dialysis (7) free.
2. Etiologic Agent - A type of microorganism helminth or virus, which causes, or significantly contributes, to the cause of increased morbidity or mortality of human beings.
3. Fomites - Inanimate objects (i.e., dressings, bandages, petri dishes) which are contaminated with etiologic (disease causing) agents, which may serve to transmit etiologic agents to humans.
4. Infectious Waste - Hazardous waste which is potentially disease producing, generated from hospitals and/or medical facilities. Infectious waste includes: laboratory waste, surgical specimens, equipment, instruments, utensils, disposable materials, human dialysis waste, carcasses of animals infected with etiological agents or any other material which in the determination of the County Health Officer and Department of Health Services regulations presents a significant danger of infection.
5. Medical Groups - Medical corporations, or medical plan institutes, which treat members of specific groups or patients at there facilities.
6. Sharps - Objects or devices having acute rigid corners, edges, points, or protuberances, capable of cutting or piercing. These include hypodermic needles, blades, and broken glass.
7. Urgency Statute - This is a statute necessary for the immediate preservation of the public peace, health, safety or general welfare within the meeting of Article 4 of the State Constitution. They take effect immediately upon adoption.

CHAPTER XI - SLUDGE

11.1 INTRODUCTION

The purpose of this chapter is to evaluate the disposal of solids generated from Publicly Owned Treatment Works (POTW) in Ventura County. Current methods used for disposal of inert grits and organic solids (sludges) will be analyzed, to identify common problems and possible short- and long-term solutions.

Most communities in Ventura County have their own independent sewage collection and treatment facilities. Inter-agency coordination of wastewater treatment and related sludge disposal activities has been minimal. It is intended that this chapter will serve as the basis for such a program.

This chapter will identify current sludge management practices and the need for an ongoing coordinated countywide effort to develop a sludge management plan. Developing this plan will require recognition that the county's sludge sources are not limited to publicly owned treatment works, but also include privately operated industrial facilities which are now affected by federal pretreatment requirements.

Methods of wastewater treatment are usually grouped together to provide primary, secondary, and tertiary (or advanced) treatment (Figure XI-1). In primary treatment, physical operations such as screening and sedimentation, are used to remove the floating and settleable solids found in wastewater. In secondary treatment, biological and chemical processes are used to remove most of the organic matter. In tertiary treatment, additional combinations of unit operations and processes are used to remove other constituents, such as nitrogen and phosphorous, which are not removed by secondary treatment.

A. Sources of Solids

The main sources of solids generated during secondary treatment of wastewater are the following:

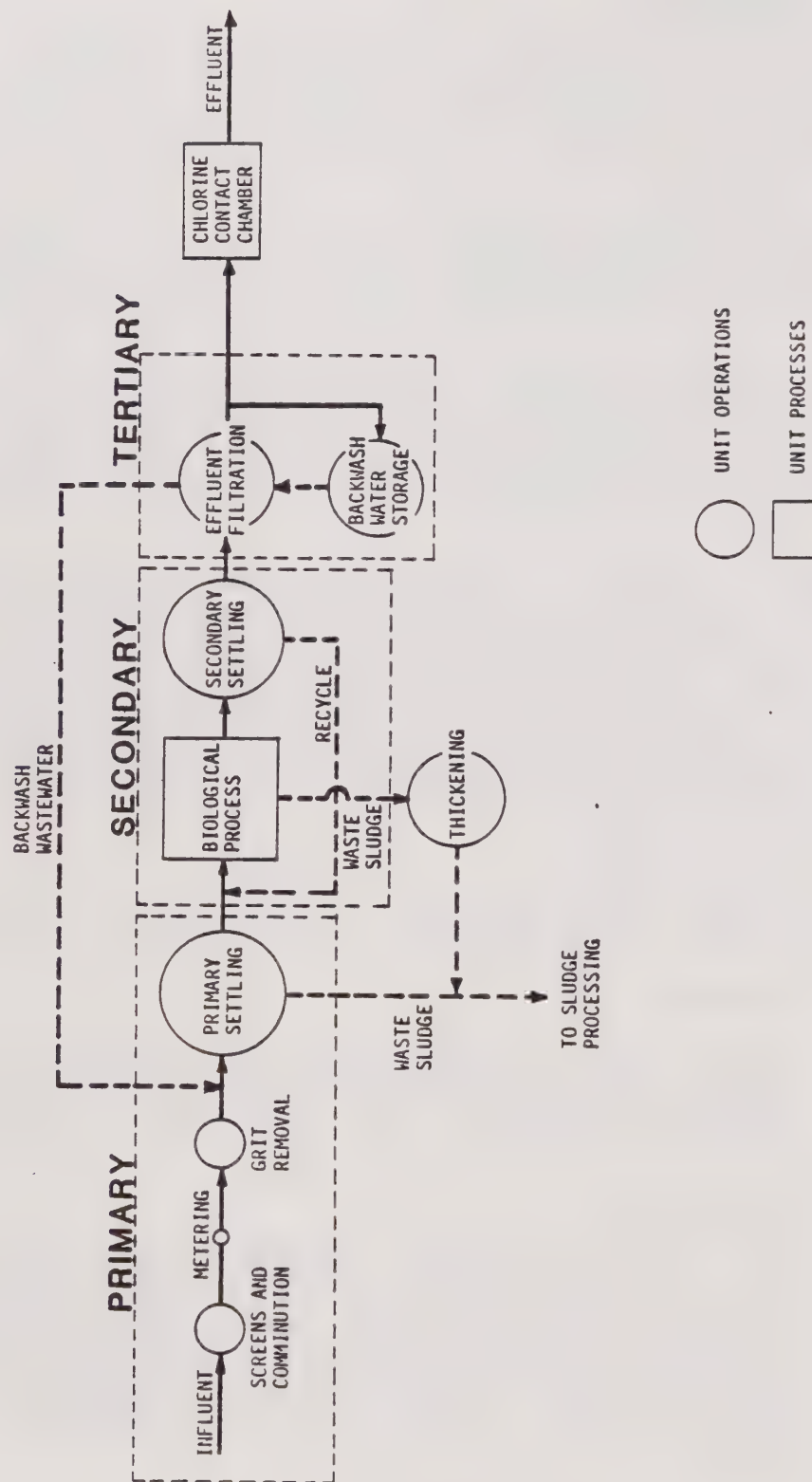
1. Screening

Coarse solids in the incoming flow to a wastewater treatment plant are often screened and removed for final disposal, or comminuted (ground or shred) and returned to the wastewater for removal in subsequent treatment processes.

2. Grit Removal

After screening, wastewater typically passes through an aerated chamber where grit is removed. Scum is also sometimes skimmed off the surface, either in grit removal or preparation facilities. Grit, like screenings, is typically removed from the plant for final disposal at a sanitary landfill without further solids processing. Scum is sometimes sold as a source of grease and oils, or combined with sludges to be digested.

FIGURE XI-1
TYPICAL PROCESS FLOW DIAGRAM



3. Primary Sedimentation

Settled sludge is removed from the bottom of primary sedimentation tanks. It is either sent directly to digesters, or to thickeners and then digesters. Scum is also removed from primary tanks and handled as mentioned above.

4. Secondary Sedimentation

Settled sludge is removed from the bottom of secondary sedimentation tanks and is usually sent to thickeners prior to digestion. Scum is typically removed from secondary sedimentation tanks and handled as previously mentioned.

B. Solids Processing

The solids that are removed in the foregoing operations are handled primarily by the following methods:

1. Thickening

Sludges are concentrated, using gravity or dissolved air flotation thickeners prior to digestion, to reduce the digester tank volume needed and decrease the amount of heat needed where anaerobic digestion is used.

2. Digestion

Digestion can be accomplished by aerobic or anaerobic treatment. Digestion provides stabilization of organic and inorganic matter in sludges. Stabilized sludge is nonputrescible and its pathogen content is greatly reduced. Anaerobic digestion allows for the production of methane gas which may be used for heat and power production.

3. Dewatering and Other Processing

An evaluation of dewatering and other solids processing that occurs after digestion, is covered in Section 11.5 of this chapter.

C. Solids Characteristics

The basic characteristics of solids generated and processed in secondary wastewater treatment plants are described as follows:

1. Screenings

Screenings are made up of organic and inorganic material large enough to be removed on bar racks and consists primarily of rags, plastics and rubber products.

2. Grit

Grit consists of heavier, inorganic solids (sand, small stones, coffee grounds, eggshells, etc.) easily settled out of the waste stream.

3. Scum

Scum is made up of floatable matter, such as grease and oils, skimmed from the surface of primary and secondary sedimentation tanks.

4. Primary Sludge

Primary sludge is composed of organic and inorganic solids removed from primary sedimentation basins. Primary sludge is gray and has a typical solids content of approximately five percent. This sludge is untreated. It has a high pathogen content and can have an offensive odor.

5. Secondary Sludge

Secondary sludge is generated in secondary treatment processes: trickling filters, biofilters, or activated sludge systems. It is typically removed from secondary sedimentation tanks. In activated sludge systems, secondary sludges are sometimes removed from the sludge line returning from the sedimentation tank to the aeration tank or from the aeration tank itself. Secondary sludges are lighter in color, less concentrated, less offensive in odor than primary sludges, and are approximately five percent solids.

6. Digested Sludge

Digested sludge is brown to dark brown and is more concentrated than primary and secondary sludges. A typical solids content of digested sludge would be approximately ten percent. The organic matter and pathogen content of digested sludge is greatly reduced. It usually does not have an offensive odor and can be applied to agricultural or landscaping uses for final disposal. Alternatively, digested sludges are dewatered by mechanical means or sent to sludge drying beds.

7. Dewatered Sludge

Digested sludges that are dewatered are brown to dark brown, nonoffensive in odor and have a dried cake appearance. Dewatering usually takes place by mechanical means (vacuum filtration, horizontal belt filtration, etc.). Solids contents of dewatered sludges are typically in excess of 20 percent.

8. Dried Sludge

Digested sludges that are dried in open air drying beds are very similar in appearance and consistency to dewatered sludges. Solids contents of dried sludges are typically in excess of 50 percent.

9. Composted Sludge

Sludges that have been composted have been through further aerobic decomposition at temperatures in the 130° to 150°F range. The pathogen content of composted sludges is very low and does not have an offensive odor. It has a humus-like appearance and is commonly used as a soil amendment or fertilizer.

11.2 SLUDGE REGULATIONS

Section 405(d) of the Federal Clean Water Act requires the development of a comprehensive sludge management regulatory policy. This requirement will be implemented when all EPA pretreatment standards have been developed. Currently, municipal sludge management is subject to federal controls set forth as part of National Pollution Discharge Elimination System (NPDES) permits for POTW's.

State jurisdiction over municipal sludge is determined by its ultimate use. The State Water Resources Control Board (SWRCB) and its regional arm, the Regional Water Quality Control Board (RWQCB), regulate disposal options. The California Waste Management Board (CWMB) reviews facilities permits issued by the Local Enforcement Agencies (Environmental Health) for the operation of sanitary landfills, and assists the Local Enforcement Agencies in interpreting and applying regulations for the disposal of sludges. The Department of Health Services (DOHS) provides guidelines and regulates marketing, distribution, and soil amendment options. The State Air Resources Control Board (SARCB) sets air quality guidelines which affect some sludge handling options such as incineration.

Ventura County agencies involved in monitoring sludge management activities include the Environmental Health Division, which enforces DOHS and other State requirements, and the Air Pollution Control District, which is responsible for local enforcement of air quality standards.

A. Storage and Treatment Regulations

The storage and treatment of sewage sludges is regulated as part of an NPDES permit through which the Los Angeles/Ventura RWQCB sets monitoring and reporting requirements. The Ventura County Environmental Health Division inspects and approves health aspects related to handling, processing, and storage of treatment plant sludges. Storage of sludges for any purpose must be in a manner that prevents propagation of flies, rodents, or other vectors, and the creation of any health hazard.

B. Transportation Regulations

Liquid sewage sludges must be transported by a hauler licensed by the County Environmental Health Division. Although a State DOHS Hazardous Materials Manifest is not required for transportation, a nonhazardous waste manifest may be required at the disposal site. Municipal sewage sludges and solids are not considered hazardous by the DOHS. The quantity of sludge disposed of at local sanitary landfills must be reported quarterly by the site operator to the Los Angeles/Ventura RWQCB and Environmental Health Department.

C. Disposal Regulations

The disposal of sludges to sanitary landfills is governed by the SWRCB Waste Discharge Requirements for Non-sewerable Waste Disposal to Land [Subchapter 15] in final stages of review by the State. These regulations are Subchapter 15 allows regional boards to adopt equal or higher standards in connection with disposal of waste materials to land.

The RWQCB has adopted a more stringent standard than the SWRCB regulations concerning the moisture (or solids) content of sewage sludges. According to the RWQCB, sludges are required to have 50 percent or greater solids content prior to disposal at a municipal solid waste (refuse) landfill. Operators of sanitary landfills can obtain permission from the RWQCB to dry sludges to 50 percent solids on site. Class I landfills are allowed to take sludges of any solids content for on-site ponding and drying. Sludges taken to Class II landfills for on-site drying must have a minimum of 20 percent solids. Simi Valley (now a Class II landfill) is the only landfill in the county that presently has on-site sludge drying facilities.

The disposal of liquid sludges (sludges with free moisture) to other land areas requires an NPDES permit from the RWQCB. The NPDES permit will define application rates, monitoring requirements, and reporting criteria. In addition, the DOHS may require certain operational procedures to be implemented to minimize effects. The DOHS also sets the length of time following cessation of landfarming activities, that the land must remain fallow.

The disposal of sludges to the ocean has been limited in the past due to restrictive state and federal guidelines. The Environmental Protection Agency (EPA) has prohibited the discharge of sludges through outfalls and has prohibited ocean dumping of sludge where it will cause "unreasonable degradation" of the marine environment. The State Water Resources Control Board (SWRCB) has completely prohibited the discharge of sludge or digester supernatant to the ocean; however, the proposed 1983 SWRCB Ocean Plan would allow regional boards to consider granting interim permits for ocean disposal of sludges, if it is shown to cause the least adverse impacts on the natural or human environment. There appears to be a renewed interest in exploring the feasibility of ocean sludge disposal because of the implementation of better toxic waste programs concerning source control and the extremely high costs and environmental effects of dewatering and disposing of sludges on land.

D. Soil Amendment and Marketing Regulations

DOHS has recently proposed new regulations concerning the marketing of municipal sludges as a soil amendment. The responsibility for enforcement rests with the County Environmental Health Division, which is presently utilizing the proposed regulatory guidelines issued by DOHS. Sewage sludges may have a substantial value locally as a soil conditioner, fertilizer, soil amendment or to augment cases at landfills. Proposed DOHS regulations are based on ultimate land use, crop type, sludge and soil characteristics. The proposed regulations are designed to prevent contamination of the environment and protect the health and safety of the citizens of the State. The proposed regulations would require the generator of sludges (which are destined for application to land, or are to be marketed) to perform periodic analysis to verify suitability. The frequency and constituent tests (Table XI-1) must be permanently kept on file and made available to user or public health officials. Limitations on the concentration of each constituent are dependent on land use.

Application rates to lands used for agricultural purposes shall be in accordance with approved practices of the Agricultural Commissioner and the Environmental Health Division.

TABLE XI-1

FORMAT FOR SLUDGE ANALYSIS PARAMETERS AND FREQUENCY

Parameter	Units, dry weight
Cadmium	mg/kg
Lead	mg/kg
Zinc	mg/kg
Copper	mg/kg
Nickel	mg/kg
Polychlorinated biphenyls (PCBs)	mg/kg
Total nitrogen	Percent
Total solids	Percent
pH	Standard Units

<u>Treatment Plant Flow</u> <u>Million gallons per day</u>	<u>Sludge Testing Frequency</u>
<1.0	Semiannually
1.0 - 10.0	Quarterly
>10.0	Monthly

Source: Ventura Regional Sanitation District, 9/83

11.3 CURRENT SLUDGE MANAGEMENT PRACTICES

There are presently 17 publicly owned wastewater treatment plants (POTW's) in Ventura County. VRSD operates nine of these, two are operated by the County and six by local city or special districts. A map showing the location of treatment plants in Ventura County is presented in Figure XI-2.

In order to adequately evaluate sludge management operations in the county, a survey was conducted in April 1983 requesting information regarding plant capacity, sludge quantities, grit and screenings quantities, methods of sludge dewatering and disposal, and solids disposal problems. The survey was answered by all of the 17 POTW's. Information related to other plants, operated by the military or private industry, was not gathered.

A summary of survey results is presented in Table XI-2. Approximately 43,000 wet tons of sludge are presently generated per year by the 17 plants surveyed for this analysis. Eventually, all of this sludge is disposed of either via soil amendment or transport to a sanitary landfill. An estimated 99.98 percent of all Ventura County sludges that are landfilled are disposed of at the Simi Valley landfill. The remaining 0.02 percent (by weight) are sludges with greater than 50 percent solids content which are disposed of at the Toland Road landfill, with fractional amounts going to the Coastal landfill. Brief descriptions of information obtained from each plant are included in the following paragraphs:

A. Camarillo Sanitary District Water Reclamation Plant

The Camarillo Sanitary District Water Reclamation Plant is located at 150 Howard Road near the Conejo Creek in southeast Ventura County, and is operated by the Camarillo Sanitary District. Design capacity of this secondary treatment plant is 6.0 million gallons per day (mgd). Sludge is anaerobically digested and dewatered on drying beds. Dried sludge is disposed by spreading on agricultural lands, specifically a local sod farm. Grit and screenings are hauled to the Ventura Coastal Sanitary Landfill. The treatment plant presently generates approximately 1,200 tons of sludge and 90 tons of grit/screenings annually.

B. Camrosa Wastewater Treatment Plant

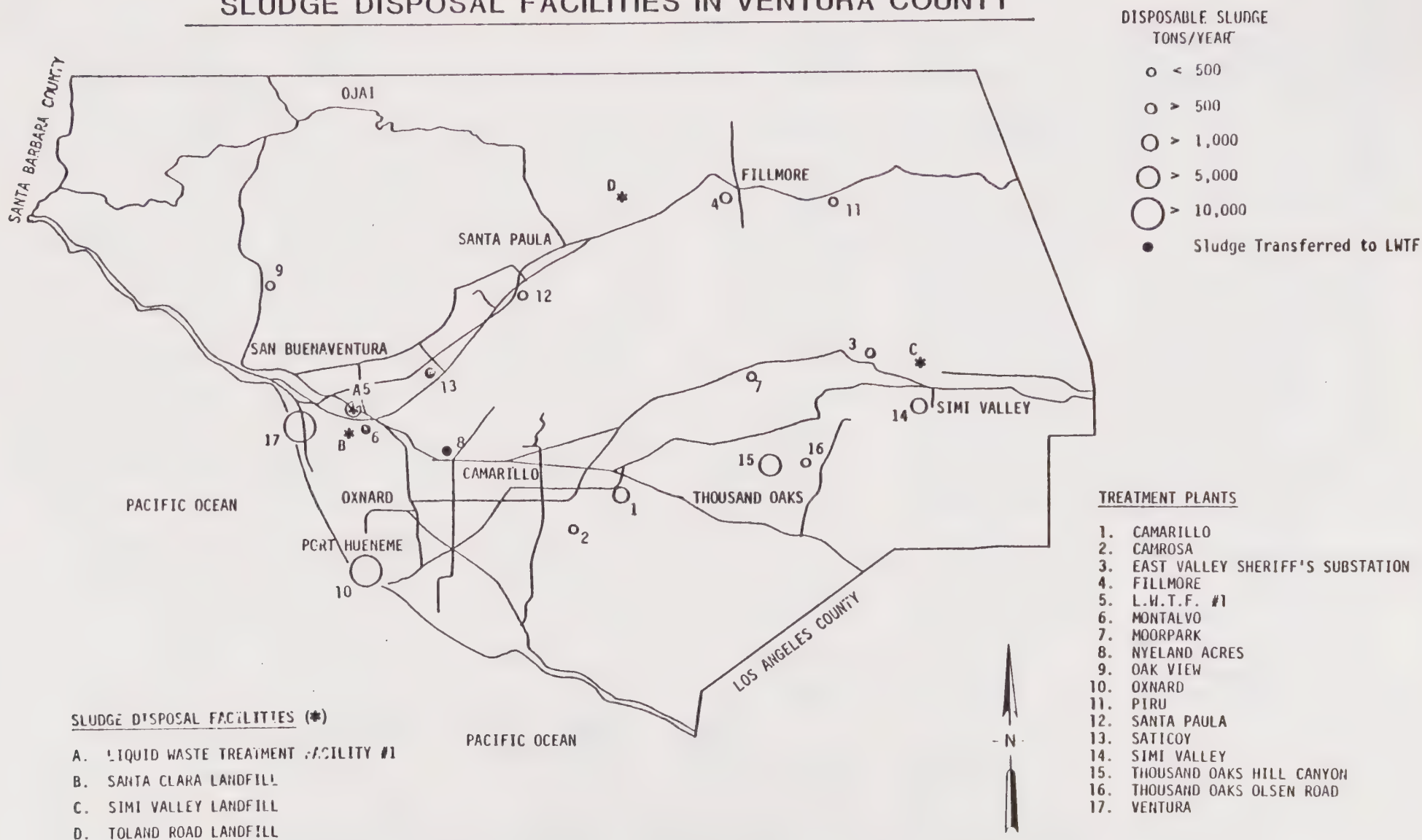
The Camrosa Wastewater Treatment Plant is located at 1878 South Lewis Road in southeast Ventura County about one-half mile east of Calleguas Creek and is operated by the Sanitary Operations Consultants, Inc. (SOCI). The treatment plant provides secondary treatment and has a design capacity of 1.5 mgd. Sludge is treated by anaerobic digestion and is dewatered in drying beds. The treatment plant presently produces small quantities of sludge all of which is given away to the public for use as a soil amendment, and small quantities of grit which is disposed at the Ventura Coastal landfill.

C. East Valley Sheriff's Substation

The East Valley Sheriff's station is a small (3,000 gallons per day), activated Sludge Plant. It is operated by the County of Ventura. Effluent is utilized onsite for landscape irrigation liquid sludge is transported to VRSD's liquid waste treatment facility #1 for disposal.

FIGURE XI-2

LOCATIONS OF WASTEWATER TREATMENT PLANTS & SLUDGE DISPOSAL FACILITIES IN VENTURA COUNTY



SOURCE: Ventura Regional County Sanitation District (VRCSD) 1983

TABLE XI-2
SUMMARY OF SLUDGE MANAGEMENT IN VENTURA COUNTY

<u>Treatment Plant</u>	<u>Location</u>	<u>Capacity (mgd)</u>	<u>Sludge Generated (tons/yr)</u>	<u>Grit Screenings (tons/yr)</u>	<u>Dewatering Process</u>	<u>Disposal Method</u>	<u>Disposal Problems</u>
E. Val. S/Stn.	2201 E. Olsen Rd	.003	Trace	Trace		LWTF	None
Camarillo	150 Howard Rd.	6.00	1,200	90	Drying Beds	Soil Amendment	Deiland dependent on weather and economy
Camrosa	1878 South Lewis Rd.	1.50	0	5	Drying Beds	Soil Amendment	None
Fillmore	50 "C" Street	1.33	550	25	Drying Beds (Toland)	Sanitary Landfill	Problems in wet weather
LWTF No. 1	3555 Ventura Rd.	0.06	1,920	25	Drying Beds	Sanitary Landfill	Problems in wet weather
Montalvo	3555 Ventura Rd.	0.25	200	0	None	Transport to LWTF	None
Moorpark	South of Highway 118	1.50***	-	-	-	--	--
Nyeland Acres	3250 E. Ventura Blvd.	0.22	200	0	None	Transport to LWTF	None
Oak View	3891 Ventura Avenue	3.00	200	0	Drying Beds	Soil Amendment	None
Oxnard	6001 S. Perkins Rd.	22.60	26,000	490	Vacuum Filtration	Sanitary Landfill (Simi Valley)	High Trans. Costs
Piru	North of Highway 126	0.20	30	0	Drying Beds	Sanitary Landfill (Toland)	--
Santa Paula	905 Corporation St.	2.40	200		Drying Beds	Sanitary Landfill (Toland)	--
Saticoy	North of Ven. River	0.52	90	100	None	Transport to LWTF	--
Simi Valley	500 W. L.A. Avenue	9.10	2,340	600	Lagoons/Drying	Soil Amendment	Under Study
T.O./Hill Canyon	9600 Santa Rosa Valley	10.00	5,200	120	Drying Beds	Sanitary Landfill****	
T.O./Olsen	2051 Olsen Rd.	0.75	60	5	Drying Beds	Soil Amendment	Problems in wet weather
Ventura	1400 Spinnaker Dr.	14.00	9,500	450	Filter Presses	Soil Amendment****	High Trans. Costs

* Solids content varies

*** Undergoing construction and expansion (PIA)

**** Excess sludge to landfill (SV)

D. Fillmore Wastewater Treatment Plant

The City of Fillmore Wastewater Treatment Plant is located at 50 "C" Street in eastern Ventura County on the north side of the Santa Clara River and is operated by VRSD. Wastewater receives secondary treatment before disposal in percolation ponds. Design capacity of the treatment plant is 1.33 mgd. Sludge is treated by anaerobic digestion and is dewatered in drying beds. Dried sludge, grit and screenings are trucked to the Toland Road Sanitary Landfill for disposal. The treatment plant presently generates approximately 550 tons of sludge and 25 tons of grit/screenings.

E. Liquid Waste Treatment Facility No. 1

The Liquid Waste Treatment Facility No. 1 (LWTF No. 1) is located at 3555 Ventura Road in western Ventura County, south of the 101 Freeway and is operated by VRSD. Sludge receives treatment by a purifax chlorination system, with the decanted liquids discharging into the City of Oxnard collection system. Typical wastes received at the plant are treatment plant liquid sludges, oil field brines, septic tank wastes, and recreational vehicle wastes.

Design capacity of the treatment plant is 0.06 mgd. In the past, liquid sludge was transported to the Oxnard wastewater treatment plant for dewatering. Upon Regional Water Quality Control Board approval and completion of construction of sludge drying beds (August 1983), sludge will be dried on site and disposed of at the adjacent Ventura Coastal landfill. Dewatering at the Oxnard plant will be available as a back-up during wet weather. The plant presently generates 1,920 tons of liquid sludge annually.

F. Montalvo Municipal Improvement District Treatment Facility

The Montalvo Municipal Improvement District Treatment Facility is located at 3555 Ventura Road on the north bank of the Santa Clara River, adjacent to Liquid Waste Treatment Facility No. 1 and is operated by VRSD. The effluent of the treatment plant is transferred to the adjacent Liquid Waste Treatment Facility for further treatment.

G. Moorpark County Sanitation District Treatment Plant

The Moorpark County Sanitation District Treatment Plant is located in southeast Ventura County, just south of Highway 118 and is operated by the County of Ventura. The treatment plant is presently (June 1983) undergoing expansion to 1.5 mgd capacity. Sludges are dried on site, in ponds. Ponds are cleaned every two years and the dried sludge is disposed of at the Toland Road landfill. No tonnages were available for sludge from the Moorpark wastewater treatment plant since it is currently undergoing expansion.

H. Nyeland Acres Wastewater Treatment Plant

The Nyeland Acres Wastewater Treatment Plant is located at 3250 East Ventura Blvd. in western Ventura County, just north of the 101 Freeway and is operated by VRSD. Wastewater receives secondary treatment before disposal to the Beardsley Wash. Design capacity of the plant is 0.2 mgd. Liquid sludge from the treatment plant is periodically removed and transported to the Liquid Waste Treatment Facility for additional

treatment. Approximately 200 tons of liquid sludge per year are generated at Nyeland Acres.

I. Oak View Sanitary District Wastewater Treatment Plant

The Oak View Sanitary District Wastewater Treatment Plant is located in western Ventura County, at 5891 Ventura Avenue between Highway 33 and the Ventura River and is operated by the Oak View Sanitary District. Wastewater receives secondary treatment before final disposal to the Ventura River. Design capacity of the treatment plant is 3.0 mgd. Sludge is treated by anaerobic digestion, and is dewatered in drying beds. About 80 percent of the dried sludge is made available to a private company for composting with the remainder going to the public for use as soil amendment. The treatment plant presently produces 200 tons of dried sludge/grit annually.

J. City of Oxnard Wastewater Treatment Facility

The Oxnard Wastewater Treatment Facility is located at 6001 South Perkins Road in southwest Ventura County, near Ormond Beach and is operated by VRSD. The plant is situated on a 17-acre site adjacent to a residential development.

Wastewater receives secondary treatment before final disposal to the Pacific Ocean. Design capacity of the treatment plant is 22.6 mgd. Sludge receives anaerobic digestion, with dewatering by vacuum filtration. The Oxnard Wastewater Treatment Facility is the largest producer of municipal sludge in Ventura County. The treatment plant presently averages 26,000 tons of dewatered sludge and 490 tons of grit/screenings annually. Sludge is trucked to the Simi Valley landfill and grit/screenings are trucked to the Ventura Coastal landfill for final disposal. This treatment plant also processes wastewater from the Point Mugu Naval Air Station, Port Hueneme Naval Construction Battalion Center, and the City of Port Hueneme.

K. Piru (Waterworks District No. 16) Wastewater Treatment Plant

The Piru Wastewater Treatment Plant is located in eastern Ventura County, north of Highway 126 and is operated by VRSD. Design capacity of this secondary treatment plant is 0.2 mgd. Sludge is subjected to aerobic digestion and is dewatered in sludge drying beds. The treatment plant averages 30 tons of sludge/grit annually, all of which is trucked to the Toland Road Sanitary Landfill for disposal.

L. City of Santa Paula Wastewater Treatment Plant

The City of Santa Paula Wastewater Treatment Plant is located at 905 Corporation Street in central Ventura County south of the 126 Freeway and is operated by VRSD. Wastewater receives secondary treatment before final disposal to the Santa Clara River. Design capacity of the treatment plant is 2.4 mgd. Sludge is treated by anaerobic digestion and is dewatered in sludge drying beds. The treatment plant presently generates 200 tons of dried sludge annually, for final disposal at the Toland Road Sanitary Landfill.

M. Saticoy Sanitary District Wastewater Treatment Plant

The Saticoy Sanitary District Wastewater Treatment Plant is situated in western Ventura County north of the Santa Clara River and is operated by the Saticoy Sanitary District. The physical plant consists of three septic tanks in series and approximately three acres of effluent percolation ponds. Design capacity of the treatment plant is 0.52 mgd. Sludge and grit settled in the septic tanks is removed once every two years and trucked to the Liquid Waste Treatment Facility No. 1 for additional treatment. The plant averages 90 tons of sludge and 100 tons of grit annually.

N. Simi Valley County Sanitation District Water Quality Control Plant

The Simi Valley County Sanitation District Water Quality Control Plant is located at 500 W. Los Angeles Avenue in southeast Ventura County at Arroyo Simi and is operated by the City of Simi Valley. Wastewater receives secondary treatment before final disposal to the Arroyo Simi. Design capacity of the treatment plant is 9.1 mgd. Sludge is subjected to anaerobic digestion and approximately 2,340 tons per year of digested sludge is dewatered in lagoons/drying beds. The plant also has an existing centrifuge which can be used to dewater sludge mechanically for hauling to a landfill if necessary. The treatment plant averages 600 tons of grit annually, which is disposed at the Simi Valley landfill. Presently all dried sludge from the treatment plant is given to the public for use as a soil amendment.

O. City of Thousand Oaks - Hill Canyon Wastewater Treatment Plant

The City of Thousand Oaks - Hill Canyon Wastewater Treatment Plant is located at 9600 Santa Rosa Valley in southeast Ventura County, adjacent to the north fork of the Arroyo Conejo and is operated by the City of Thousand Oaks. Wastewater receives tertiary treatment before final disposal to the north fork of the Arroyo Conejo. Design capacity of the treatment plant is 10.0 mgd. Sludge is digested and then dewatered in drying beds. The treatment plant presently generates approximately 2,700 tons of dried sludge and 120 wet tons of grit annually. To the extent possible, dried sludge from the treatment plant is given to the public for use as soil amendment. However, in past years approximately 90 percent of the sludge generated has been disposed of at the Simi Valley landfill. The City is in the process of constructing a sludge dewatering facility which will utilize a belt filter press. Grit is hauled to the Simi Valley landfill for disposal.

P. City of Thousand Oaks - Olsen Road Water Reclamation Plant

The City of Thousand Oaks - Olsen Road Water Reclamation Plant is located at 2051 Olsen Road in southeast Ventura County off Freeway 23 and is operated by the City of Thousand Oaks. Design capacity of the treatment plant is 0.75 mgd. Sludge is treated by aerobic digestion and is dewatered in drying beds. Dried sludge is trucked away by private citizens for use on lawns as fertilizer or soil amendment. The treatment plant presently produces 60 tons of sludge and five tons of grit annually. Wastewater receives secondary treatment before it is discharged to an adjacent water course.

Q. Ventura Water Renovation Facility

The Ventura Water Renovation Facility is located at 1400 Spinnaker Drive in western Ventura County, near the mouth of the Santa Clara River and is operated by the City of Ventura. Wastewater receives tertiary treatment before final disposal to the Santa Clara River. Design capacity of the treatment plant is 14.0 mgd. Sludge is stabilized by anaerobic digesters and is dewatered by filter presses. The plant averages about 9,500 tons of dried sludge annually, which is disposed at the Simi Valley landfill. Approximately 450 tons of grit is trucked to the Ventura Coastal landfill annually.

11.4 EVALUATION OF SLUDGE DISPOSAL ALTERNATIVES

A diagram of possible sludge disposal alternatives for Ventura County is presented in Figure XI-3. A subjective analysis of dewatering to 20 percent solids, drying to 50 percent solids, composting and a total of five final disposal options is presented in this section.

A. Dewatering to 20 Percent Solids

Dewatering to 20 percent solids is required for sludges used as a soil amendment in agricultural/landscaping. Such dewatering is also required if sludge is to be composted or if it is to be disposed of using pyrolysis. Sludges disposed at municipal waste landfills also must be dewatered to 20 percent solids and then dried to 50 percent solids (either prior to or at the landfill).

The two main dewatering methods used in Ventura County are vacuum filtration and horizontal belt filtration.

1. Vacuum Filtration

Vacuum filtration is a continuous operation accomplished on cylindrical drum filters fitted with a fabric medium. Vacuum filters are made with surface areas ranging from 50 to 300 square feet and can be equipped with various types of filter cloth. Conditioning of wet sludges is necessary to achieve satisfactory yield. A uniformly dewatered sludge can be produced from either raw or digested sludge. A typical solids loading rate is 3.5 lb/sq ft/hr. The solids content of dewatered sludge will be approximately 20 to 25 percent under normal operating conditions.

2. Horizontal Belt Filters

A variety of horizontal belt filters are available to dewater sludges. The system consists of an endless filter belt running over a drive and guide roller at each end. Sludge is fed on the upper face of the filter belt and is continuously dewatered between the filter and press belts. A typical solids loading rate is 6.7 lb/sq ft/hr. The solids content of the dewatered sludge will be approximately 20 percent under normal operating conditions.

B. Drying to 50 Percent Solids

Drying to 50 percent solids is required for final disposal in municipal waste sanitary landfills. As shown in Figure XI-2, such dried sludge may

also be used for agricultural/landscaping purposes as a final disposal method.

The common method of accomplishing drying in Ventura County is the use of sludge drying beds. Typically, sludge is placed on beds of sand in an 8 to 12 inch layer and allowed to dry. Solids loading rates vary from 10 to 25 lb/sq ft/yr. for open drying beds. The solids content of dried sludge will be approximately 60 percent after 10 to 15 days of drying under favorable conditions. Climatic conditions govern the continuous use of open drying beds.

C. Composting

As an alternative to landfill disposal, composted sludge can be marketed for agricultural and landscaping uses. The two common types of composting are windrow and vessel. Prior to composting, the sludge must be dewatered to 20% solids.

1. Windrow Composting

Windrow composting is an aerobic decomposition of organic waste by micro-organisms. The process is a two-step operation. First, the waste is placed in small piles, and air is drawn through each pile to force ventilate the waste. This continues for approximately two to three weeks to allow destruction of pathogenic organisms. Second, the waste is windrowed and turned daily by a composting machine to facilitate drying. Both stages are essential for adequate processing of waste. Once dry, the produce is marketed as a soil amendment. Major disadvantages of this alternative are the high requirement for land, extensive site preparation, and relatively short equipment life.

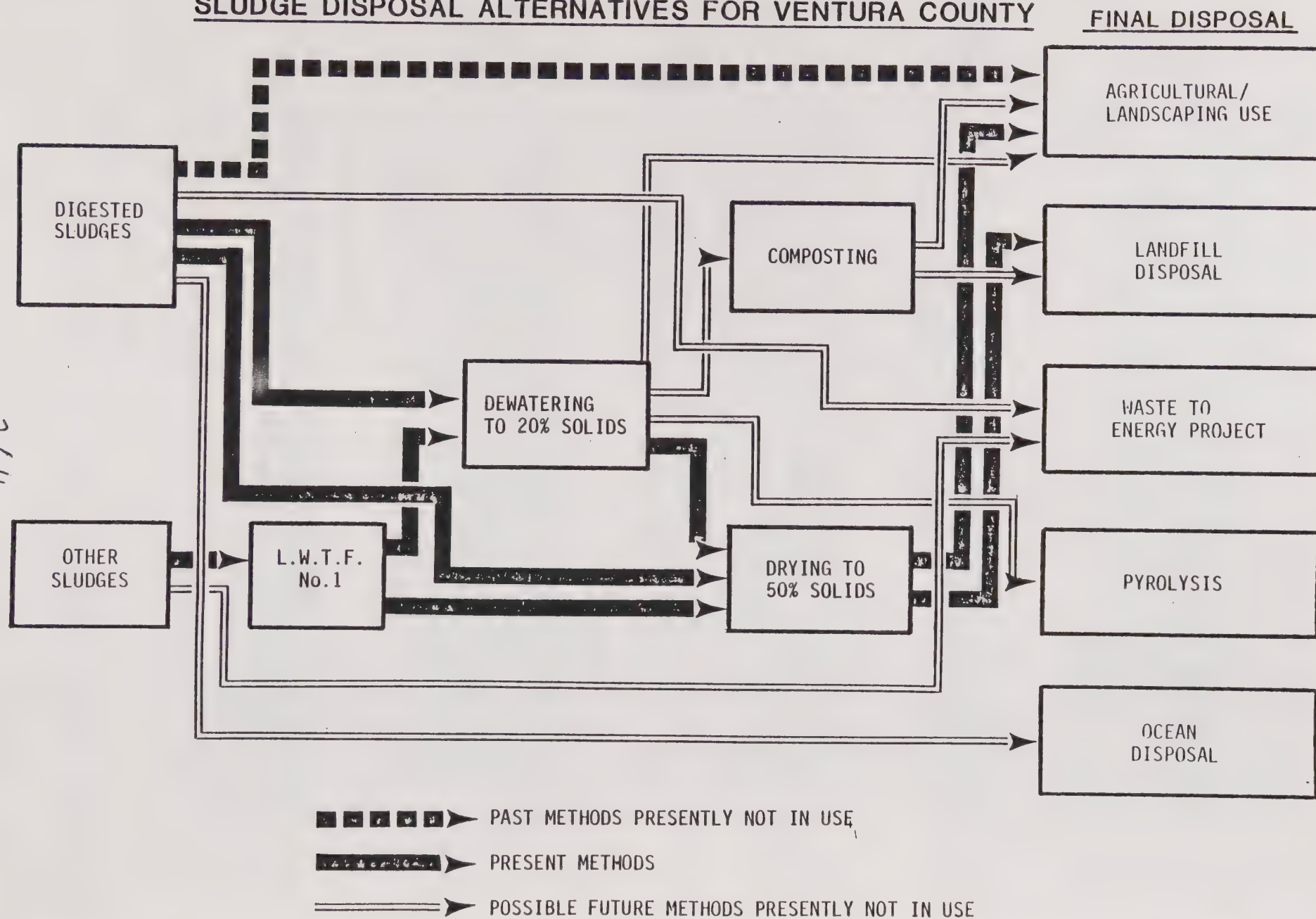
2. Vessel Composting

Vessel composting consists of a completely enclosed mechanical process for the composting of sewage solids. Enclosed reactors allow for control of environmental factors such as oxygen level and temperature which speeds up the composting process and eliminates odors. Dewatered sludges are mixed with recycled compost and additives to provide proper porosity and nitrogen-carbon ratio. Composting continues for approximately two weeks prior to transfer to a curing vessel where further stabilization and conversion to a humus is completed.

D. Final Disposal

Five methods are identified in Figure XI-3 as possible options for the final disposal of sludge: agricultural/landscaping use, landfill disposal, Waste-to-Energy Project, pyrolysis and ocean disposal.

FIGURE XI-3
SLUDGE DISPOSAL ALTERNATIVES FOR VENTURA COUNTY



1. Agricultural/Landscaping Use

Municipal sewage sludges are valuable when used as a soil amendment. Nutrient levels, especially nitrogen, make marketing of sludge more plausible as other fertilizing compounds become increasingly expensive. Problems typically associated with agricultural use of sewage sludge (heavy metals and industrial wastes which can prohibit or complicate such use) have not been found to be significant in Ventura County. The handling involved in using sludges for agricultural and landscaping varies with the moisture content. Landfarming (whereby wet, digested sludges are tilled into the soil) is not presently practiced in Ventura County; however, as previously mentioned, there are numerous plants that provide free dried sludges for use as a soil amendment.

2. Landfill Disposal

There are presently three municipal waste sanitary landfills in operation in Ventura County: Simi Valley, Toland Road, and Coastal Bailard. Grit and sludges dried to at least 50 percent solids can be disposed at all three landfills. As previously mentioned, only Simi Valley presently has drying bed facilities to take sludges dewatered to at least 20 percent solids.

It is technically feasible to install drying facilities at the other two landfills sometime in the future. It may also be possible to use sludge to augment or substitute for daily cover. Preliminary testing is underway to determine if sludges can be mixed with sand or other material to both reach the 50% solid requirement and possible to create a usable cases product.

Based on the present rate of sludge generation, it is projected that the municipal sludge production in Ventura County would be 65,000 tons by the year 2000.

3. Waste-to-Energy Project

Waste-to-energy projects, such as formally proposed by CMI-ENCOM for Southern California Edison's Ormond Beach generating station, can incorporate sludges in the process. The CMI facility would have processed 530,000 gallons per day of liquid sludges, along with the 500 tons/day of municipal refuse.

4. Pyrolysis

The pyrolysis process is the physical and chemical decomposition of organic matter brought about by the action of heat in a reactor where oxygen is limited. Heat is applied to the wastes which distills off the volatile compounds. Because there are only limited amounts of oxygen in the system, complete combustion of the volatile and carbonaceous material does not occur. During the pyrolysis cycle, the heat applications induce a reaction with water and carbon dioxide which results in carbon monoxide. The predominant products from the pyrolysis process are hydrogen, carbon monoxide, methane, carbon dioxide, various hydrocarbons, steam, ferrous metals, and glass. When considering pyrolysis as a sludge treatment/disposal system, it should

be noted that the process development has been relatively recent, its performance is uncertain, and costs unknown.

5. Ocean Disposal

The high costs of dewatering sludges and the lack of suitable land disposal sites in metropolitan areas has created a renewed interest in exploring the environmental feasibility of sludge disposal in the ocean. The Orange County Sanitation District is in the process of implementing a pilot program to evaluate the effect of ocean disposal of sludges through an outfall off the Orange County coast. It is important to stress, however, that since the environmental feasibility of ocean disposal has yet to be demonstrated, implementation of this alternative would appear ill-advised in Ventura County. It may be possible to implement a similar pilot project off the Ventura County coast. Better treatment of effluent now makes ocean disposal more feasible.

11.5 CURRENT PROBLEMS AND FUTURE NEEDS

Basic information about sludge handling and disposal for the 17 publicly owned treatment plants in Ventura County was presented in the preceding sections of this chapter. An evaluation of the survey conducted for these plants has revealed several common problems and needs as described below.

A. Current Problems

Many of the treatment plants in Ventura County use sludge drying beds to obtain a solids content of at least 50 percent. These sludges are then used locally as a soil amendment or hauled to one of the municipal waste landfills in the county. The use of sludge drying beds presents a problem during wet winters (such as 1983) when sludges must be hauled off site for dewatering and disposal. Sludges from several plants were taken to the Oxnard Wastewater Treatment Plant for dewatering during the winter of 1983. Only when the sludge is dewatered to at least 20 percent solids can it then be transported to the Simi Valley landfill for drying and final disposal.

Another problem facing treatment plants where dried sludge is given away as a fertilizer or soil amendment is that the amount of sludge removed depends upon local economic factors that are beyond the plant operators control. If the public does not take the sludge, the plant must make other arrangements for storage or transport to a landfill for disposal.

The costs related to processing sludges in drying beds are fairly low; however, larger plants or plants located in areas where land costs are high cannot afford to acquire enough additional land to create the drying beds alternative. Plants that fit into this category are Oxnard and Ventura. Both of these plants rely on expensive dewatering systems, instead of drying beds.

B. Future Needs

The future needs of the county in sludge management are directly related to the problems identified above:

- o At plants located in less populated areas, where inexpensive land is available, drying beds will continue to be feasible. However, in these areas there is still a need to provide a means of disposal during wet winter months.

- o Plants relying on the public to use dried sludge as a soil amendment/fertilizer have a need to develop a marketing strategy to be assured of maintaining a demand for all sludges generated.
- o Plants using dewatering processes, have a need to reduce costs wherever possible. For example, the Oxnard Wastewater Treatment Plant could eliminate dewatering and hauling costs if ocean disposal of sludges were possible. Alternatively, if sludge drying facilities were available at a landfill in the western part of the county, Oxnard and Ventura could continue dewatering, but reduce its hauling costs.

11.6 FINDINGS

This chapter of the CoSWMP primarily provides background data on existing sludge management practices and project future sludge volume. This information, supplemented by a brief discussion of sludge disposal alternatives, can serve as a basis for establishing the direction of a Countywide Sludge Management Plan. Developing a regionwide sludge management plan, though not a simple matter, is an important subject worthy of comprehensive planning. In terms of total solid waste management planning priorities, sludge management should rank second only to hazardous and solid waste management. Other areas in California have spent considerable amounts of time and money to develop sludge management plans. Therefore, it might prove beneficial to examine their plans in conjunction with development of Ventura County's Plan.

A suggested approach to sludge management based on data in this chapter includes setting some near-term and long-term goals. Near term goals to solve immediate problems related to sludge management include:

A. Identifying New Sites

Identifying candidate sites that could be used to dewater sludges from their typical 20 percent solids content to 50 percent in order to prepare the material for land disposal (State regulations require that before a sludge can be accepted for final disposal at a landfill it must be dried to at least 50 percent solids state). Likely candidate sites for the near-term would be existing landfills, or open land near sewage treatment facilities that now rely on expensive dewatering facilities.

B. High Cost of Hauling

In Ventura County, the Simi Valley landfill is presently the only location where final disposal of unconcentrated sludge is allowed by State regulatory agencies. Since 80 percent of all sludges in the county are generated in western and central Ventura County (21 percent at Ventura, 57 percent at Oxnard/Port Hueneme, and 2 percent at Santa Paula/Fillmore treatment facilities), hauling to the eastern end of the county deserves to be reviewed in terms of economics and the environmental impacts.

11.7 RECOMMENDED ACTIONS

A. Institute a Countywide Regional Sludge Management Study

Long term planning for the ongoing disposal is a Countywide issue. It is necessary to develop a long range plan for disposal of sludge from all of

the wastewater treatment facilities in Ventura County. The study should address all alternatives in depth, and evaluate implications for municipal waste landfills that might receive or process sludge. The study should address environmental, legal and economic constraints. It should be noted that at the time of this writing, a regional sludge study is in the latter stages of development. The study is being coordinated by VRSD under contract to Montgomery Engineers.

Responsible Agency: VRSD

Schedule: Short-term planning period

CHAPTER XII - OIL FIELD WASTE MANAGEMENT

12.1 INTRODUCTION

The purpose of this chapter is to describe how oil field waste is managed in Ventura County, evaluate the existing management practices, discuss findings from the evaluation, highlight Ventura County's oil field waste management needs, and recommend an oil field waste management plan.

The oil industry is the second largest industry in Ventura County following agriculture. In February 1982, the major oil field waste disposal site in Ventura County was closed. At the present time, a major portion of the nonsewerable oil field waste is transported to the Casmalia disposal facility located in Santa Barbara County, although some is transported to the B.K.K. disposal site in Los Angeles and to Kettleman Hills disposal facility in Kings County as well.

Oil field waste is defined as a variety of natural and industrially produced materials used or generated during drilling and production of oil and gas wells. As wastes, these materials are of no further technical or economic value to the operating company, drilling contractors, or supplies and service companies involved in well drilling and production activities (Reference 12-1).

A. Regulations

Waste generated from oil and gas production is regulated at the Federal level by the Environmental Protection Agency (EPA), and at the State level by the Department of Health Services (DOHS), State Water Quality Control Board, and the State Division of Oil and Gas. However, it is important to note that State regulations regarding oil field waste are more stringent than Federal regulations.

1. Federal Regulations

Under Federal regulations (40 CFR 261.4), oil field wastes are excluded from identification and listing as hazardous wastes. As stated in 40 CFR 261.4, exclusions from the hazardous waste listing include:

"drilling fluids, produced waters and other wastes associated with the exploration, development or production of crude oil, natural gas or geothermal energy." (Reference 12-5).

2. State Regulations

Responsibility for regulating oil field waste in California rests with the State Department of Health Services (DOHS). DOHS has chosen to exempt certain types of oil field wastes from hazardous waste classification.

According to California Administration Code, Title 22, Chapter 30, "Minimum Standards for Management of Hazardous and Extremely Hazardous Wastes", any waste that consists of or contains a material cited in the list presented in Article 9, Section 66680, shall be considered hazardous unless it can be proven otherwise. This list includes

several oil field wastes including; drilling fluids, drilling mud; oil and water, tank bottom sediment, and tank cleaning sludges. This list does not take into account the likely dilution of hazardous additives during drilling operations.

Since developing the original listing, DOHS has obtained more information regarding the nature of drilling fluid additives and their usage. In 1982, DOHS released a list of chemical and material drilling fluid additives which the DOHS has concluded do not render the muds and resultant fluids hazardous wastes (Table XII-1). The DOHS believes these additives listed, will not cause the muds and fluids to be considered hazardous waste, if the additives are used as recommended by the manufacturer's specifications, and provided other hazardous constituents are not used (Figure XII-1).

The problem in interpreting these regulations is that no minimum concentrations have been provided by DOHS. Therefore, compliance by industry and enforcement by local government agencies is complicated.

The State Division of Oil and Gas (DOG) has jurisdiction over subsurface disposal of fluids produced by oil production activities. DOG's jurisdiction stems from the Federal 1976 Clean Water Act, part of which includes the Underground Injection Control Program administered by the Environmental Protection Agency (EPA). DOG administers a similar program called the Water Flood and Water Disposal Program and works closely with EPA in regulating safe disposal of oil production fluids.

These fluids, which are largely produced water or brines, can be disposed of by reinjection into spent wells, evaporation from ponds, or transported to an offsite disposal area.

The State Water Quality Control Board (SWQCB) is responsible for the waters discharged on the surface. Oil companies are required to obtain an approved Waste Discharge Permit from the SWQCB and show satisfactory water quality and safe discharge area. Approval of this permit is in conjunction with DOG and EPA.

3. Regulations of Oil Field Waste Generated Offshore

Oil field waste which is generated offshore is regulated differently, depending upon whether oil production is within State or Federal waters.

Federal waters begin three miles offshore and are referred to as the Outer Continental Shelf (OCS) waters. Oil field waste generated in the OCS is allowed to be discharged into the ocean at the production site pursuant to a blanket National Pollutant Discharge Elimination System (NPDES) permit issued by the Environmental Protection Agency. The list of "generic" drilling muds and additives that are allowed to be discharged, as well as other discharge conditions, are referenced in the Federal Register, 40 CFR 7312-7329 (Permit No. CA 0110516) requirements under the California Environmental Quality Act (CEQA) is shown. Therefore, oil field waste generated within State waters must be disposed of on land, unless it is specifically allowed to be discharged in accordance with an NPDES permit issued by the Regional Water Quality Control Board and providing the State Coastal Commission permits discharge as part of their Coastal Development Permit.

TABLE XII-1

CALIFORNIA DEPARTMENT OF HEALTH SERVICES
DRILLING MUD ADDITIVES
USED IN HAZARDOUS DRILLING MUDS AND FLUIDS^(a)
MAY, 1982

- | | |
|--|--|
| 1. Aluminum stearate (Aluminum tristearate) | 27. Polyanionic cellulosic polymer |
| 2. Attapulgite clay | 28. Polysaccharides |
| 3. Bagasse (dried sugar cane) | 29. Potassium chloride |
| 4. Barium sulfate | 30. Potassium hydroxide (Caustic potash) |
| 5. Bentonite | 31. Potassium sulfate |
| 6. Calcium carbonate | 32. Pregelatinized corn starch |
| 7. Causticized lignite (Sodium lignite) | 33. Quartz or cristobalite |
| 8. Cellophane | 34. Rice hulls |
| 9. Chrome free lignosulfonate | 35. Sawdust |
| 10. Cottonseed pellets | 36. Shredded paper |
| 11. Diamines and fatty acid amides | 37. Sodium acid pyrophosphate |
| 12. Detergents | 38. Sodium bicarbonate (Bicarbonate of soda) |
| 13. Ethylene oxide adducts of phenol and nonylphenol | 39. Sodium carbonate (Soda ash) |
| 14. Guar gum | 40. Sodium carboxymethylcellulose |
| 15. Hydroxyethyl cellulose | 41. Sodium chloride |
| 16. Lecithin | 42. Sodium hexametaphosphate |
| 17. Lignite | 43. Sodium hydroxide (Caustic soda) |
| 18. Magnesium oxide | 44. Sodium montmorillonite clay |
| 19. Methanol | 45. Sodium polyacrylate |
| 20. Mica | 46. Sodium tetraphosphate |
| 21. Morpholine polyethoxyethanol | 47. Starch |
| 22. Nut shells | 48. Tetrasodium pyrophosphate |
| 23. Paraformaldehyde | 49. Tributyl phosphate |
| 24. Peptized bentonite | 50. Vegetable and polymer fibers, flakes, and granules |
| 25. Phosphoric acid | 51. Vinyl acetate/Maleic anhydric copolymer |
| 26. Polyacrylamide resin | 52. Xanthan gum (XC polymer) |

- a. These additives will not render a waste drilling mud or fluid hazardous when used according to manufacturer's specifications and provided no other nonlisted hazardous constituents are used or are brought up from the geof ormation.

Source: California Department of Health Services, 1982

DEPARTMENT OF HEALTH SERVICES

14744 P STREET
SACRAMENTO, CA 95814

316) 324-1789



July 9, 1982

TO: Producers, Transporters, and Disposers of
Waste Drilling Muds and Fluids

FROM: Hazardous Waste Management Branch
714 P Street, Room 523

SUBJECT: Identification of Nonhazardous Waste Drilling Muds and Fluids

Waste drilling muds and fluids are listed in state hazardous waste regulations (Section 66630, Chapter 30, Division 4, Title 22, California Administrative Code) as hazardous wastes if the muds or fluids contain hazardous materials. That listing does not take into account the likely dilution of hazardous additives during drilling operations.

Since the time of the listing, the Department has obtained from laboratory testing and from manufacturers more information about the nature of drilling fluid additives and their usage.

The information has made possible the development of the enclosed list of chemical and material drilling fluid additives which the Department has concluded do not render the waste muds and fluids hazardous wastes. Note that some chemicals on the enclosure are listed in the regulations as hazardous wastes (e.g., phosphoric acid and sodium hydroxide). If these, and other additives, are diluted and used as recommended by the manufacturers, however, they will not cause the waste muds and fluids to be considered hazardous wastes.

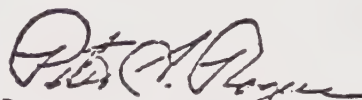
Accordingly, persons producing, transporting, and disposing of waste drilling muds and fluids containing only the listed additives may manage them as non-hazardous wastes, provided they do not contain substantial concentrations of toxic substances from other sources (e.g., toxic metal from geological deposits encountered during drilling operations). Drilling muds that contain additives which are not included on the list will continue to be considered hazardous waste. The Department will periodically revise the enclosed list as more information is obtained. If you wish to add a chemical or material to the list, please send to the Department supporting data such as Material Safety Data Sheets, chemical compositions, toxicities, and concentrations used (e.g., lbs/lbl).

-2-

Please note that all waste drilling muds and fluids, hazardous and nonhazardous, must be disposed at sites approved by the Regional Water Quality Control Boards.

If you have any questions on this matter please contact the Chemical Support Unit at (415) 540-2043.

Sincerely,



Peter A. Rogers, Acting Chief
Hazardous Waste Management Branch

Enclosure

B. Goals and Objectives

The primary goals of managing oil field waste in Ventura County, is to provide an adequate oil field waste site for the disposal of non-hazardous oil field wastes, protect public health and safety, minimize damage to the environment support assessment of technological alternatives (i.e., processing technique), and protect property from any potential adverse effects of oil field wastes. This is accomplished by implementing sound management methods and ensuring that oil field waste is properly treated, transported, and disposed of in compliance with current regulations and requirements.

Objectives

o Provide for the Proper Treatment and Disposal of Oil Field Waste

Encourage the use of environmentally sound oil field waste management practices and identify suitable locations for establishing a centralized treatment and disposal facility for non-hazardous oil field waste generated within Ventura County, either in conjunction with a municipal waste landfill or at a separate site.

o Prevent Illegal Dumping of Oil Field Wastes

Discourage indiscriminant and illegal dumping of oil field wastes by maintaining an adequate enforcement and education program.

o Determine the Amount of Offshore Oil Field Waste Generated

Determine offshore oil field waste production in the Santa Barbara Channel, by coordinating with the oil industry, neighboring coastal counties, and appropriate State and Federal agencies, in obtaining data and information on the quantities and types of oil field waste generated in Ventura County.

o Continue to Collect Oil Field Waste Data Generated Onshore

Continue to collect and analyze the amount and types of oil field waste generated onshore in Ventura County. Continue to coordinate with the oil industry and appropriate State and Federal agencies, in obtaining data and information on the quantities and types of oilfield waste generated in Ventura County.

o Support Proven Oil Field Waste Treatment Processing

Encourage use of proven oil field waste treatment processes as alternatives to disposal.

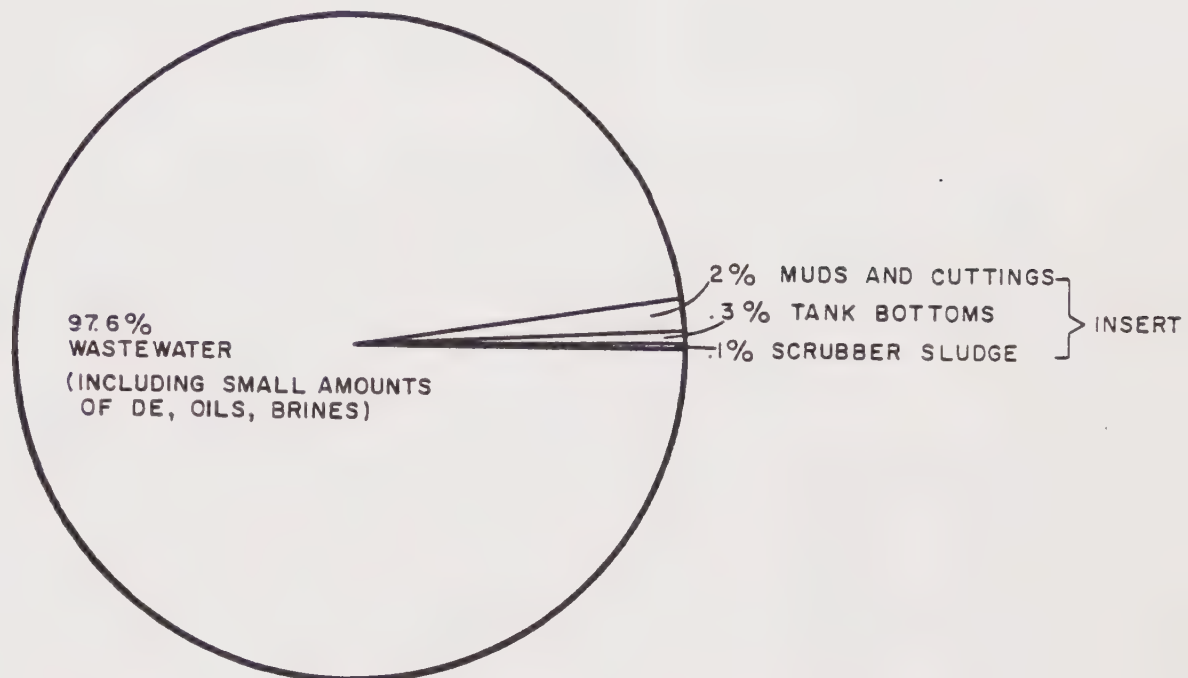
12.2 THE EXISTING OIL FIELD WASTE MANAGEMENT SYSTEM

A. Oil Field Waste Composition

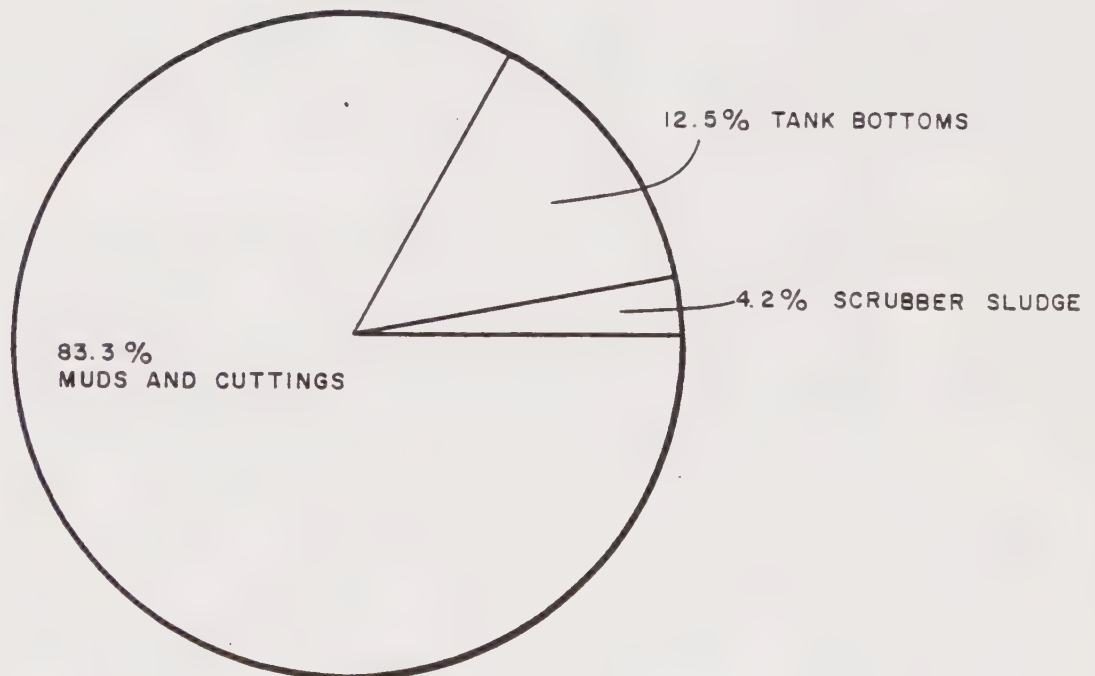
There are a number of different types of waste generated from the exploration and production of oil and gas (Figure XII-2). The composition of offshore oil field waste is similar to onshore oil field waste. However, different phases of oil production yield different types of oil field waste. Types and sources of oil field waste include:

Figure XII -2

OIL FIELD WASTE COMPOSITION



INSERT



SOURCE: VENTURA COUNTY RMA, PLANNING DIVISION
OIL FIELD WASTE SURVEY, MARCH 1982

- o drilling muds and cuttings from drilling operations,
- o tank bottoms and produced water from oil separation operations,
- o scrubber sludge from gas cleaning operations, and
- o diatomaceous earth, slop oil, residual oil, and wastewaters from water cleaning operations.

The following describes the types of oil field waste generated in Ventura County.

1. Drilling Muds and Cuttings

Drilling muds and cuttings are wastes derived from oil and gas drilling. Drilling mud is a dense colloidal slurry (a viscous gel) circulated through the well bore to lubricate and cool the drill bit, circulate cuttings and other debris to the surface for extraction, and to counter the build-up of hydrostatic pressure encountered in geologic formations. The composition of drilling mud is either water based or oil based. Water based muds are basically considered nonhazardous and are more common, due to the more economic disposal methods available. However, oil based muds are used when required depending upon the particular formation being drilled. Oil based drilling muds are considered hazardous wastes due to the heavy metals and/or other toxic substances present, and must be disposed of in an appropriate hazardous waste site outside Ventura County. In general, drilling mud is generally comprised of bentonite clay, fresh water or saturated salt mixtures, and barite or naturally occurring barium sulphate ore.

Cuttings include debris and sand which collect in the well bore resulting from the penetrating action of the drill bit. These materials must be removed from the well bore to avoid clogging the drill bit and thickening the drilling mud. Drilling muds and cuttings make up approximately 2% of the total amount of oil field waste generated in Ventura County.

2. Tank Bottoms and Produced Water

Wastes from oil separation operations include tank bottoms, and refer to the solids such as clay, which separates out of well fluid components from the formation. These solids are composed of mineral salts, organic compounds, and a fraction of dense oil based compounds. Tank bottoms represent approximately 0.3% of all oil field waste generated within Ventura County. Sometimes solvents are used to clean tank bottoms out of oil in order to recover usable oil. Usually oil is removed by gravity separation and remaining oil residue is removed by vacuum trucks using water hoses and a squeegee.

Produced water also called brines, or formation waters, are deep groundwater deposits having high mineral and salt content which are produced with oil and gas extraction from the oil bearing strata. Brines are a complex mixture of gases, oil, water, and minerals which surface with the oil during production. Production well brines collect in the well bore, as the geologic formations in which they are contained are penetrated during drilling activity. Once separated from the oil, it is further cleaned and usually reinjected back into the strata. Oil field waste consists mostly of produced water.

3. Scrubber Sludge

Oil field waste from gas cleaning operations is referred to as scrubber sludge. Wet gas from the formation and from tanks is drawn through columns with plates to remove water and any impurities. This process purifies the gas by putting it through a water or a chemical wash leaving behind scrubber sludge. Scrubber sludge accounts for approximately 0.1% of all oil field waste generated within Ventura County.

4. DE, Slop Oil, Residual Oil, and Waste Water

Wastes from water cleaning operations include diatomaceous earth (DE), oils, waste waters and produced water.

Diatomaceous earth (DE) is a filter material (located in filter cylinders) and is used to take oil, iron sulfide, and any impurities out of the produced water so that it can be reinjected underground.

Slop oils are asphaltines and paraffins which are emulsified with water and solids and remain after gas flotation and from flushing gravel filters and DE filters.

Residual oil is a waste most often contained in wastewaters and/or mixed with the drilling mud, as the drilling equipment separates near or within oil bearing geologic zones. Small amounts of residual oil are brought to the surface as part of the circulatory mud process and as part of the removal of brines from the well bore.

Waste water is the water that results from the backwashing of the water cleaning filters. The resultant is comingled with produced water and recycled for reuse.

Oil field wastes from water cleaning operations along with produced water from oil separation operations, make up approximately 97.6% of all oil field wastes generated in Ventura County (Figure XII-1).

5. Enhanced Oil Recovery Wastes

As the oil reservoir is depleted, new methods have been developed to recover a greater percentage of the oil. This technology produces wastes some of which include, polymers, surfactants, and caustics. Since these methods of recovery are relatively recent, it appears as if these waste volumes may be insignificant at this time. The 1982 survey contained in this chapter failed to collect data on these types of waste. In the future, however, these types of wastes may well increase as the technology enhancing oil recovery improves.

B. Treatment and Disposal

In Ventura County, several different disposal and/or treatment options are currently available for handling oil field wastes. Both onshore and offshore generated oil field waste requiring disposal off-site is handled in the same manner. These options include, landfarming, landspreading, lagooning, and discharging into the sewerage system.

1. Landfarming and Landspreading

Landfarming of oil field wastes involves spreading the waste on a designated area of land and working it into the soil (discing) by mechanical means using heavy equipment. Discing of the waste occurs as soon as the waste has been spread on the site.

Landspreading is the same as landfarming except that the waste is not worked into the soil immediately after application but several days later. It may be important to note, some of the oil industry disagree with the distinction made between landfarming and landspreading and use these terms interchangeably. By the natural processes of biodegradation, evaporation, and absorption, oil field wastes can be safely discharged to the soil when using either landfarming or landspreading disposal techniques under controlled conditions. Soil loading capacities must be known and not exceeded, in order to maintain aerobic conditions and minimize odors at the site.

The types of waste which are disposed of using the landfarming or landspreading methods include; drilling mud, cuttings, tank bottoms, diatomaceous earth, and slop oil.

Landfarming and landspreading areas require a conditional use permit (CUP) in Ventura County. Presently, Getty Oil Company is the only permitted landfarm operating in Ventura County. A Solid Waste Facility Permit was issued recently for this facility by the County Environmental Health Division. This privately operated 30 acre site is located off School Canyon Road and is within the Ventura oil field. This is a relatively small site used for oil field waste generated only by Getty's operations and deemed non-hazardous by the State Department of Health Services (DoHS).

2. Lagooning

Lagooning or ponding of oil field waste is another disposal or treatment option currently available for handling oil field waste. Lagoons are in fact, ponds used for evaporation and settling of oil field waste. Unlike landfarming and landspreading methods, very little biodegradation takes place. Both drilling muds and cuttings are disposed of using this ponding technique.

Once the oil field waste is discharged into a lagoon or pond it settles out into three distinct layers. The top layer is oil, the middle layer is waste waters or brines and the bottom layer is composed of sludges, tank bottoms, muds, and cuttings. Using recovery equipment, the oil is skimmed off the top, the waste water is siphoned into another pond and allowed to evaporate, and the sludges, tank bottoms, muds, and cuttings are removed and treated, reused and/or disposed.

Currently no permitted lagoon sites exist in Ventura County and these wastes are transported to an appropriate facility outside the County. The majority of these wastes are taken to the Casmalia Hazardous Waste Facility in Santa Barbara County.

3. Discharge to the Sewerage System

Discharge of treated brines or wastewaters into the sewerage system is yet another way of disposing of oil field waste. Presently, three facilities exist in Ventura County which are capable of accepting and pretreating brines for disposal. All release their treated waste into the City of Oxnard's sewerage system. These facilities are the Montalvo Liquid Waste Treatment Facility (LWTF), Santa Clara Wastewater Company in Santa Paula, and the Chevron Oil field Brine Treatment Facility in Oxnard (Table XII-2).

C. Storage and Handling

In accordance with State Solid Waste Management regulations, oil field waste may be stored temporarily on a short term basis in sumps. These wastes must be generated on-site at previously operated sites on land. A sump is a pit or a reservoir (sometimes cement-lined) which serves as a temporary receptacle for the liquid wastes associated with oil production. At one time it was quite common for oil field wastes to be disposed of in a sump located adjacent to an oil production area.

There are approximately 98 sumps in Ventura County for which the Air Pollution Control District (APCD) has issued permits. These range in size from 15 to 34,000 square feet. APCD no longer issues permits for "new" sumps, thus all "new" oil production areas must haul their wastes to an appropriate site or treatment facility. However, APCD does issue permits for sump tanks or slop tanks for temporary storage of oil field waste on-site. APCD's control effectiveness estimate, assumes sumps will eventually be replaced with tanks which are 99% effective in controlling air pollution emissions (References 12-7, 8).

Ventura County APCD also issues permits for other facilities which handle oil field wastes in the field. These facilities are identified under various names such as standby drain pit, concrete emergency sump pits, blowdown pits, emergency waste water tanks and emergency waste water bowls. They are not identified as oil sumps, nor do they serve in the capacity of an oil sump as the term has been used in years past. In addition various conditions have been placed on the use of these facilities which vary from site to site.

It should be noted that all of these facilities are a routine part of handling waste in the oil field. Most appear to be used on a temporary or emergency basis with specific APCD stipulations.

D. Collection and Hauling

Collection of oil field waste to be disposed offsite is done by a registered hazardous waste hauler, even though a majority of the waste hauled is actually non-hazardous. These haulers are registered with the DoHS. There are presently twelve registered hazardous waste haulers for oil field waste serving Ventura County, and these are listed in Table XII-3.

TABLE XII-2

OILFIELD WASTES SUMMARIZED

WASTE TYPE	ORIGIN	DISPOSAL/TREATMENT OPTIONS CURRENTLY AVAILABLE
I. Wastes From Drilling		
A. Drilling Mud, Cuttings, Workover Mud	A. From drilling wells, redrills, and workovers	A. Landfarm Landspread Lagooning
II. Wastes From Oil Separation		
A. Tank Bottoms	A. Oil, water, gas, and clay are produced from the formation. The heavier particles settle in the tanks.	A. Recycling - Solvent Treatment, Landfarm, Landspread
B. Produced Water	B. This is the water that is pro- duced with the oil and gas, and brought to the surface from the oil bearing strata.	B. Filtered then reinjected for enhanced oil recovery. Also evaporation ponds, injection into disposal wells, or dis- charge treated water to the sewer.
III. Wastes From Gas Cleaning		
A. Scrubber Sludge	A. Wet gas from the formation and from tanks is sucked through columns with plates to remove water and any impurities.	A. Hauled to hazardous waste disposal site or recycled through water treatment system.
IV. Wastes From Water Cleaning		
A. Diatomaceous Earth (DE)	A. From the filter cyclinders used to take oil, iron slufide, and any impurities out of the pro- duced water so that it can be reinjected underground.	A. Landfarm Landspread
B. Slop Oil	B. Left over after gas floatation and from flushing gravel filters and DE filters. They are asphal- tines and paraffins which are emulsified with water & Solids.	B. Landfarm Landspread
C. Wates Water	C. Water resulting from the backwashing of this water cleaning filters.	C. Comingled with produced water and recycled for review.

SOURCE: Getty Oil Co. and Conoco, Inc. December, 1982. Revised May 1983.

TABLE XII-3

OIL FIELD WASTE HAULERS IN VENTURA COUNTY

805-643-5111
Argo Petroluem Corp
940 E. Santa Clara Street
Ventura, CA 93001

805-643-0516
Ventura Petroleum Service
P.O. Box 6812
Ventura, CA 93003

805-524-2377
Barnett Trucking Inc.
136 E. Telegraph Road
P.O. Box 416
Fillmore, CA 93015

805-647-1604
Pacific Construction & Maintenance
P.O. Box 4129
Ventura, CA 93001

805-647-6020
W/C Tanklines, Inc.
88 Mara Avenue
Ventura, CA 93004

805-648-5123
Ecology Control, Inc.
2567 North Ventura Ave.
Ventura, CA 93001

805-525-2144
Petroleum Construction, Inc.
P.O. Box 592
Santa Paula, CA 93060

805-525-3331
Milum Textile Service
1150 E. Main Street
Santa Paula, Ca 93060

805-656-7600
Union Oil Co. of California
Southern California District
P.O. Box 6176
Ventura, CA 93003

805-646-7394
Legrande's Trucking
Ojai, Ca 93023

805-648-2325
Jesse D. Sutton
64 E. Vince Street

805-647-0594
K W Trucking
P.O. Box 3254
Ventura, CA 93004

805-653-2744
Reagen Vacuum Truck Service, Inc.
P.O. Box 289
Ventura, CA 93002

Source: Ventura County Environmental Health Division, Hazardous Materials
Information Bulletin, 5/83

Recordkeeping requirements for the generator of these wastes are designed to track the waste from the moment it is generated to its final disposal (known as "cradle-to-grave" management). The manifest carried by the hauler contains the name and location of the oil field waste generator, the type and volume of waste, and the destination of the waste.

Collection and hauling of oil field waste generated offshore is accomplished by barge. Barges transport oil field wastes to Port Hueneme where it is then trucked to an appropriate disposal facility outside the County.

12.3 EVALUATION OF THE EXISTING OIL FIELD WASTE MANAGEMENT SYSTEM

A. Survey Results

According to a recent survey conducted by County Planning Division staff, twenty-three of the largest-by-volume oil producing companies in Ventura County generated 2,637,232 barrels of oil field waste in 1981 which required disposal offsite. Approximately eighty percent (2,112,864 barrels) consisted of produced water from oil separation operations. All of this was treated and rendered nonhazardous at one of the three liquid waste treatment facilities in the County and discharged to the sewerage system. Approximately fifteen percent (404,172 barrels) consisted of nonhazardous muds and cuttings, brines, and tank bottoms. Most of these wastes are now disposed of outside the county. Roughly five percent (120,196 barrels) consisted of hazardous oil field wastes containing sludges, tank bottoms, muds and cuttings, and a small amount of contaminated brines, all of which was disposed of outside the county. Table XII-4 represents the results of this survey.

TABLE XII-4

OIL FIELD WASTE GENERATED
WITHIN VENTURA COUNTY REQUIRING DISPOSAL OFFSITE, 1981

<u>Waste Type</u>	<u>Hazardous Non-Hazardous</u>	<u>Monthly Generation (barrels)</u>	<u>Annual Generation (barrels)</u>	<u>Annual Percentage</u>	<u>Disposal Location</u>
A. Produced Water	Non-Hazardous	176,072	2,112,864	80%	Wastewater Treatment Facility
B. Muds and Cuttings, Tank Bottoms, Sludges, Produced Water	Non-Hazardous	33,681	404,172	15%	JNJ site - closed 1982 now disposed of outside the county)
C. Muds and Cuttings, Tank Bottoms, Sludges, Produced Water	Hazardous	<u>10,016.3</u>	<u>120,196</u>	<u>5%</u>	Casmalia Class I Disposal Site
	TOTAL	219,769.3 barrels	2,637,232 barrels	100%	

Source: Ventura County Planning Division Oil Field Waste Survey of March, 1982.

B. Total Waste Production

1. Onshore

According to the survey, the petroleum industry in Ventura County generated approximately 24,845,211 barrels of oil field waste during 1981. Approximately ninety percent of this waste never leaves the production area. Of the ninety percent remaining on site, 87% is used largely as reinjection fluid, and thus, it is misleading to call this an actual waste. Approximately .6% is used in road maintenance, and 2.4% is held in temporary holding tanks.

The remaining ten percent is correctly termed oil field waste and leaves the oil production area for appropriate disposal because it cannot be recycled or reused, or reinjected onsite. This ten percent of all oil field waste generated, represents the 2,637,232 barrels of oil field waste generated in Ventura County in 1981 which required disposal offsite (Reference 12-3).

2. Offshore

At this writing, there are nineteen oil platforms in the Santa Barbara Channel. The Santa Barbara Channel is considered to include the ocean area from Point Conception to the Ventura-Los Angeles County line and

extends westward to the Channel Islands. Of the nineteen platforms in the Santa Barbara Channel, seventeen of the oil platforms are actively producing oil. Five of these platforms lie within State waters and twelve lie within Federal waters, referred to as the Outer Continental Shelf (OCS). Each platform typically has more than one well to a platform. The number of well slots per platform in the Santa Barbara Channel range from two to ninety-six. Thus, it is difficult to estimate the quantities of oil field waste being generated offshore by estimating the amount of waste generated from a single platform. The twelve OCS producing platforms that lie within Federal waters have obtained General National Pollution Discharge Elimination System (NPDES) permits which allow for direct ocean discharge of most oil field waste. In addition, depending on the current status of existing permits, some of these platforms may have individual NPDES permits for their discharges. For drilling rigs and platforms which lie in State waters, an NPDES permit is required. Depending upon the restrictions placed by the permit, some oil field wastes such as drilling muds and cuttings, may be required to be transported to shore facilities. The remaining five platforms which lie within State waters do not have NPDES permits and must transport their waste onshore. Port Hueneme is the port of entry for barges carrying offshore oil field waste which are then off-loaded and the majority are trucked to the Casmalia disposal facility. It is not known at this time, how much oil field waste is generated from offshore oil production.

C. Disposal Locations

1. Closed Facilities

Ventura County's oil industry at one time disposed of approximately fifteen percent of its oil field waste at a privately operated facility located in the County. In February, 1982, this site ceased its operation. This site was approximately 75 acres in size, of which approximately 50 acres was actively used for oil field waste disposal activities. The land farming method of disposal was utilized, whereby oil field waste was spread onto an area surrounded or shaped by large embankments or berms. It was then allowed to stand for several days while solar evaporation and percolation of liquids took care of most of the waste and the remainder was disced into the soil, and turned until dry.

At the time this site closed, it was receiving approximately 45,000 barrels per month of oil field wastes, 85-90% of which was produced water (Reference 12-1).

2. Currently Operating Facilities

Since the closure of the JNJ site, the Casmalia Hazardous Waste Facility in Santa Barbara County has been receiving the majority of the County's non-sewerable oil field waste. This facility is located in Santa Barbara County and is 4,300 acres in size, 252 acres of which are designated as a Class I landfill. The site life is currently estimated to be 78-98 years. A wet air oxidation waste treatment process plant now on line is expected to extend site life. Ninety-one percent of all

waste received at Casmalia is oil field waste, eighty-two percent of this is drilling muds. The remaining eighteen percent consists of waste oils, tank bottoms, and scrubber sludge. Of the oil field waste received at Casmalia from Ventura County at least seventy-five percent is actually a nonhazardous waste.

As mentioned earlier, there are approximately ninety-eight sumps in Ventura County. The general location of these sumps is shown on Table XII-5. State Solid Waste regulations allows for the use of temporary sumps that take small quantities of nonhazardous oil field waste (Reference 12-10).

3. Liquid Waste Treatment Facilities

The Montalvo Liquid Waste Treatment Facility (LWTF) operated by VRSD, is located in Montalvo, and handles wastes which are unsuitable for direct disposal into the sewage system without pretreatment. Oil field waste brine or wastewater is just one type of liquid waste handled at this facility. Treatment required for brine waters prior to discharge consists of chlorination by the Purifax process which reduces the biological oxygen demand (BOD).

Liquid oil field waste makes up approximately 25-30% of the waste stream treated at this facility daily. It is estimated approximately 744 barrels or 32,000 gallons of brines are discharged from this facility into the sewerage system daily. One barrel is equivalent to 42 gallons (Reference 12-6).

The privately operated Santa Clara Wastewater Company treats and disposes of brines or produced water oil field waste. This facility is located in Santa Paula. Treatment of these oil field wastes comprises 90% of the liquid waste handled at this facility. Treatment consists of oil skimming and recovery, solid liquid separation, and biological treatment by aerated lagoons. Approximate disposal rate of oil field brines is 2,250 barrels/day of the liquid waste.

Chevron operates an oil field brine and tank bottom treatment facility located in Oxnard, and treats brines from its own leases, and a few independent leases in the Oxnard Plain area. Treatment consists of several separation steps; oil is recovered and shipped to a refinery, gas is scrubbed and piped back to the well to power well-pumps, and tank bottoms are periodically hauled to an appropriate landfill. Approximately 3,000 barrels/day of brines are discharged into the sewerage systems from the Chevron Facility.

TABLE XII-5
OIL SUMPS AND HANDLING FACILITIES IN VENTURA COUNTY ³

No. ¹	COMPANY	LOCATION	CTAZ ²	SQ. FT.	QUANTITY
B	CONOCO INC.	GRUBB LSE 3251 PAC CST HWY	1205	864	1
20	GETTY OIL COMPANY	LLOYD LSE-VENTURA FIELD	1206	34778	1
28	GETTY OIL CO.	LLOYD CORP. LSE-VENTURA FIELD	--	100	1
33	PHILLIPS PETROLEUM	7459 PACIFIC COAST HWY	1205	1700	2
41	SHELL CALIFORNIA PRODUCTION	TAYLOR LSE-VENTURA AVENUE	1205	2600	1
49	CHEVRON USA INC.	OXNARD PLAINS FIELD/TODD LSE	4803	24	1
52	TEXACO INC.	DIEDRICH LSE	4702	120	1
57	UNION OIL	BROADOAKS LSE	204	1200	1
58	UNION OIL	OAKRIDGE FIELD	8509	2412	1
59	UNION OIL	TORREY CANYON FIELD	204	17,500	1
60	UNION OIL	BARDSDALE LSE	304	750	1
64	SANTA FE ENERGY CO.	WITMER LSE-SESPE FLD.	101	120	1
66	EXETER OIL CO LTD	MAULHARDT LSE-OXNARD OILFIELD	4704	324	2
76	GETTY OIL COMPANY	TEMESCAL FEE LSE-TEMSCLE FLD	206	2500	1
78	UNION OIL	BIG MOUNTAIN LST-OILFIELD	7613	1512	1
50	UNION OIL	OAK PARK OILFIELD-OAK PK LSE	7613	81	1
300	FAIRFIELD VOLUNTEER PETROLEUM	HOLSER CANYON	201	4200	1
301	CONOCO INC.	HOBSON LSE-PADRE JUAN CYN	1205	312	1
302	UNION OIL	HILL LEASE-SOUTH MTN LFD	501	100	1
303	UNION OIL	SOUTH MTN FIELD-PRICE LSE	501	5400	1
308	UNION OIL	M&N RICHARDSON LSE-S MTN FLD	501	40	1
310	UNION OIL	3824 GUIBERSON RD-LTS PLT	204	120	1
311	UNION OIL	IRWIN-BERYLWOOD LSE-BARDSDALE	304	72	1
313	UNION OIL	LEMON LSE-W MTN FLD	501	100-	1
314	UNION OIL	WELDON CYN-OJAI FLD	1206	400	1
315	UNION OIL	BRIDGE PLT	501	200	1
316	UNION OIL	C&H LSE-W MTN FLD	501	56	1
318	GULF OIL EXPLOR & PROD CO.	HARTMAN-BARNARD HARTMAN LEASE	1202	300	1
323	SANTA FE ENERGY CO.	BONBRAKE B LSE-SESPE	301	1500	1
325	SANTA FE ENERGY CO.	TAR CREEK LSE	301	200	1
327	TEXACO INC.	SCHOLLE LIVINGSTON LSE	4803	120	1
329	JACK HERLEY OPERATIONS	SOUTHERN PACIFIC CO. LSE	4803	20000	1
332	MCFARLAND ENERGY	BLACK LSE-RAMONA FIELD	201	70	1
333	MCFARLAND ENERGY	LOWEL-MAXWELL LSE	101	96	1
343	ENERGY DEVELOPMENT OF CA	PACIFIC COAST HIGHWAY	1205	144	1
344	CENTRAL LEASE INC.	MCGRATH LSE-MONTALVO FLD	2903	540	1
348	SANTA FE ENERGY CO.	HOBSON B LEASE	1205	250	1
343	SANTA FE ENERGY CO.	HOBSON C LSE-RINCON	1205	1040	1
334	SHELL OIL CO.	EDWARDS LSE-SATICOY FLD	505	2700	1
350	GETTY OIL CO.	VL&W	--	19,456	1

No. ¹	COM	LOCATION	CTAZ ²	SQ. FT.	QUANTITY
357	SHELL CALIFORNIA PRODUCTION	GOSNELL LSE	1202	12	1
359	SHELL CALIFORNIA PRODUCTION	SCHMIDT LSE-VTA AVE FLD	1202	180	1
362	OJAI OIL COMPANY	SOUTH MOUNTAIN FIELD	501	2200	2
363	ARGO PETROLEUM CORP.	HOPPER CYN FLD	206	128	1
364	ARGO PETROLEUM CORP.	SESPE FIELD-MEL BLANC LSE	101	100	1
367	ARGO PETROLEUM CORP.	SESPE FIELD-SELTZER LSE	101	36	1
368	ARGO PETROLEUM CORP.	SESPE FIELD-STRAND LSE	101	36	1
372	ARGO PETROLEUM CORP.	SESPE FIELD-FRANKEL "A" LSE	101	100	1
380	ARGO FERNDALE RANCH	IMI NE HWY 150	401	128	1
381	ARGO PETROLEUM CORP.	NESBITT LSE SILVERTHREAD FLD	911	800	1
388	SUN OIL CO	SILVERTHREAD FLD-HAMP LSE	911	128	1
397	CHEVRON USA INC.	MCGRATH S POOL	2901	600	1
398	CHEVRON USA INC.	PATTERSON LSE	3601	79	1
400	CHEVRON USA INC.	PFEILER LSE-OXNARD PLAINS	4802	64	1
410	ARCO OIL AND GAS CO.	SILVERTHREAD LSE-OJAI FLD	907	63	1
737	SANTA FE ENERGY CO.	TAR CREEK FEDERAL LSE	306	200	1
886	CHEVRON USA INC.	GORDON LSE OXNARD PLAINS	4802	64	1
410	ARCO OIL AND GAS CO.	SILVERTHREAD LSE-OJAI FLD	907	63	1
737	SANTA FE ENERGY CO.	TAR CREEK FEDERAL LSE	306	200	1
886	CHEVRON USA INC.	GORDON LSE OXNARD PLAINS	4705	60	1
888	CHEVRON USA INC.	MAULHARDT LSE-OXNARD PLAINS	4902	36	1
889	CHEVRON USA INC.	DIETRICH LSE-OXNARD PLAINS	4704	80	1
891	CHEVRON USA INC.	DAILY LSE-OXNARD FLD	4704	36	1
892	CHEVRON USA INC.	DUNTLEY LSE-OXNARD PLAINS	4802	60	1
894	SANTA FE ENERGY CO.	HANSEN LSE-SESPE FLD	301	400	1
906	LLOYD CORPORATION	BORCHARD LSE	4803	200	1
907	LLOYD CORPORATION	POWER LSE	4803	200	1
909	LLOYD CORPORATION	MCGRATH LSE-OXNARD FLD	5609	168	1
911	TEXACO INC.	HAMMON FEE SHELLS	306	100	1
914	TEXACO INC.	NORCOP B LSE-S MTN	501	120	1
917	TEXACO INC.	T U HYDE-PINKERTON LSE	501	120	1
918	TEXACO INC.	T U NORCOP LEASE	501	120	1
920	TEXACO INC.	T U H I RICHARDSON SLE	501	120	1
921	TEXACO INC.	T U RICHARDSON RANCH LSE	501	120	1
923	TEXACO INC.	T U STINE B NCT-1 LSE	501	120	1
924	TEXACO INC.	T U TAYLOR LSE S MTN	501	120	1
925	TEXACO INC.	T U VAN LENTE LSE	501	90	1
930	TEXACO INC.	SANTA PAULA FEE-S MTN	501	120	1
932	TEXACO INC.	HARVEY LSE-S MTN	501	120	1
938	ARCO OIL AND GAS CO.	CLARK & WEST TANK FARM #1	101	224	1
940	ARCO OIL AND GAS CO.	LAUBACHER-FLEISHER LEASE	2905	100	1

No. ¹	COMPANY	LOCATION	CTAZ ²	SQ. FT.	QUANTITY
941	ARCO OIL AND GAS CO.	OJAI FEE LSE-TANK FARM #2	911	81	1
942	ARCO OIL AND GAS CO.	TANK FARM #3	911	128	1
963	DECALTA INTL CORP	HIDDEN LSE-TEMESCAL FIELD	206	576	1
970	MOBIL OIL CORPORATION	RINCON ONSHORE-S775 PACIFIC	1205	4080	3
971	CRESTMONT OIL CO.	RAMONA LSE	201	500	1
973	DRESTMONT OIL & GAS CO	HOLSER LSE-NEAR PIRU CREEK	201	400	1
977	EXETER OIL CO LTD	E E LENOX LSE BTEN OX & CAM	4803	240	1
984	UNION OIL	DRYDEN LOCATION-BARDSDALE	304	540	1
989	UNION OIL	TAPO-SIMI FIELD	--	100	1
1031	WM THORNBURRY INC	BARDSDALE OIL FIELD	304	483	1
1036	UNION OIL	ADAMS CANYON LOCATION	805	1980	1
1037	UNION OIL	SALT MARSH LOCATION	802	1400	1
1038	UNION OIL	SULPHUR CREST EXMISSION	802	450	1
1060	BUENAVENTURA TERMINAL CORP	1689 NORTH OLIVE	(cleaned up)	44500	3
1151	RIDGEWAY CORPORATION	TIMBER CANYON OILFIELD	(S.P.GA)	225	1

Other Handling Facilities:

Location

350	GETTY OIL CO.	VL&W	120 barrel, Blowdown Pit
20	GETTY OIL CO.	LLOYD LSE-VENTURA FIELD	10,000 barrel, Emergency Waste Water Tank
20	GETTY OIL CO.	LLOYD LSE-VENTURA FIELD	70,000 barrel, Emergency Waste Water Bowl

Lease

901	SHELL OIL CO.	SCHIEFFERLE HEIRS	25 sq. ft.
896	SHELL OIL CO.	CASPERSON	64 sq. ft.
354	SHELL OIL CO.	EDWARDS	2700 sq. ft
336	SHELL OIL CO.	EDISON	12 sq. ft.
360	SHELL OIL CO.	CITRUS	22"
360	SHELL OIL CO.	CITRUS	36"

1. No. refers to APCD permit number

2. CTAZ = Census Tract Analysis Zone

3. This list may not contain all valid permits issued by the Air Pollution Control District (APCD)

SOURCE: Ventura County Air Pollution Control District 1982 Data.

4. Ocean Discharge

Offshore generated oil field waste is discharged into the ocean if an NPDES permit has been acquired through the appropriate agency. The EPA is the appropriate agency for OCS waters and the RWQCB is the responsible agency in State waters. Wastes not authorized by the NPDES permit are barged ashore and transported to an appropriate disposal facility outside the County. Presently, all twelve of the OCS platforms have obtained NPDES permits which allow direct discharge of drilling muds and other platform wastes into the ocean. The five remaining active platforms which lie within State waters, do not have NPDES permits at this time and therefore must barge oil field wastes to shore for land disposal at Casmalia.

5. Proposed Facilities

o Oil Field Waste Steering Committee Project

In 1982, the Ventura Regional Sanitation District (VRSD) organized an effort to develop an oil field waste disposal site and as a result, formed the Oil Field Waste Steering Committee. Formalization of the Committee occurred in November 1982, when VRSD and eight local oil companies signed a contract in which the oil companies agreed to finance permit applications. The oil companies involved in this project were: Argo Petroleum Corp., Chevron U.S.A., Inc., Conoco, Inc., Getty Oil Co., Texaco, Inc., Shell California Production Inc., Santa Fe Minerals, Inc., and Santa Fe Energy Co.

This Committee sought an oil field waste disposal facility which would use state-of-the-art disposal methods of treatment and disposal. The site would have a minimum life of 20 years, and a minimum size of approximately 100 acres. The Committee estimated costs for development of such a site to be between \$400,000 and \$568,000. The cost factors included a siting study, land lease, permit processing, and State and County permit fees, plus VRSD and County staff time. The Committee also funded a "siting study," to identify viable sites. Their consultant identified a total of ten sites that appeared viable to the consultant (Reference 12-12).

The Oil Field Waste Steering Committee took an active role during the public review of the Draft CoSWMP. The Committee spoke in favor of alternative technological processes to treat waste and opposed a proposed Draft CoSWMP requirement that any new oil field waste facility be combined with a municipal waste site. The committee argued mandating a combined site would limit flexibility and potentially increase environmental impacts. The Solid Waste Task Force ultimately supported these positions.

The Oil Field Waste Steering Committee formally terminated its activity on June 30, 1984, citing several reasons, including an acknowledgment that current economic conditions had reduced drilling and the associated generation of oil field wastes. Individual oil companies representatives remain active on an ad-hoc basis.

o Proposed Simi Valley Landfill Oil Production Waste Treatment and Disposal Expansion

It was proposed in 1983 by Chemical Waste Management Incorporated (the then operators of the Simi Valley landfill), that non-hazardous oil production wastes generated by land-based operations in the region of Ventura County and by off-shore operations south of Santa Barbara, would be accepted for treatment and disposal at the Simi site. The principal waste components would consist of drilling mud, oil production brines, oil-contaminated waters, tank bottoms, and scrubber wastes. Up to 129 acre-feet per year of these wastes containing an average of 20 percent solids were proposed to be processed and disposed at the site.

Subsequently, operation of the Simi Valley landfill was transferred to Waste Management Inc. The current operators have indicated they have no intention of operating the Simi Valley landfill as an oil field waste site.

o Proposed Chemfix Stabilization Project

A private company, Ven Virotek, is proposing to initiate a demonstration project for treating, stabilization, and disposing of nonhazardous oil field drilling muds at the Ventura Coastal Landfill site. It is proposed, that up to 15 to 20 truck loads of nonhazardous drilling muds, approximately 4,200 gallons per truck load (84,000 gals/day), be tested, stored, treated, and stabilized using the Chemfix process prior to disposing of the muds at the Landfill. Five acres of land at the site is proposed to be used for the Chemfix process, and 10 to 15 acres are required for storage of incoming drilling muds. All drilling muds will be batch tested to ensure muds treated at the site are nonhazardous. The process is proposed to be implemented for a 180 day test period, and will be designed to accomplish the following objectives.

- o Test for the potential use of drilling muds as landfill cover material.
- o Provide field data on the Chemfix process.
- o Test stabilization abilities of the Chemfix process.

Prior to the Chemfix process being initiated at the Ventura Coastal site, Chemfix must receive a waiver from the County from an otherwise required amendment to Ventura Coastal's Solid Waste Permit, and an amendment to Ventura Coastal's Discharge permit from the Los Angeles Regional Water Quality Control Board.

o Proposed Siting Policy for an Oil Field Waste Site

The need for safe disposal of locally generated and nonhazardous oil field waste is evident. Previous findings of this report also indicate the need for additional landfill area for municipal waste. Some have indicated it would be wise to concentrate these two vital needs of the County into one effort by selecting one site suitable for both types of wastes. Others suggest requiring that both be sited at the same location is inflexible. It is argued that small sites that are viable as oil field waste sites would not qualify as a combined site.

The Draft CoSWMP had a policy requiring any oil field waste site be combined with a municipal waste site. Each of the tentative landfills was evaluated as if it were to be used for both municipal and oil field waste.

On July 18, 1984, the Solid Waste Task Force recommended that the Draft CoSWMP policy requiring a combined site be replaced by a more flexible CoSWMP policy supporting either combined or separate sites. It was also recommended that specific separate sites not be identified now and that tentative landfill sites only be considered (and assessed) as in municipal waste sites. On September 4, 1984, the Board of Supervisors concurred with these recommendations.

D. Illegal Discharge

During 1982, several incidences of illegal oil field waste disposal occurred in Ventura County. Twenty-three illegal disposal sites were discovered by Ventura County Environmental Health Division, the agency responsible for handling illegal disposal incidents. One party is responsible for all but one of the twenty-three sites. Civil suits have been filed against the parties involved and legal proceedings are presently underway.

E. Enforcement

Enforcement by the County in the past has been on a complaint basis, due to lack of staff. The actual number of illegal disposal incidences occurring in the Ventura County are unknown, so the full scope of the problem has not been identified at this time. Recently, the Environmental Health Division has taken a more active stance on enforcement of illegal discharges through the recently board approved Hazardous Waste management Plan and Hazardous Materials Response Plan. Public education has been initiated to discourage illegal dumping and legal action is now taken against the violator to establish guilt and recover clean-up costs expended by the local enforcement agency.

12.4 FINDINGS

Specific issues in Ventura County regarding the management of oil field waste include the following:

A. Regulations

Regulations regarding oil field waste conflict among State and Federal agencies. Oil field waste is summarily defined as a hazardous waste at the Federal level but not at the State level. At the State level, DOHS has exempted some, but not all oil field waste types.

B. Disposal Site

Since the closing of the oil field waste disposal facility in February, 1982, a centralized oil field waste treatment facility/disposal site does not exist in Ventura County. According to the 1982 oilfield waste survey, the petroleum industry in the County generated approximately 524,368 barrels of oil field waste in 1982, the majority of which required land disposal. Such wastes are now being disposed of at the Casmalia Class I facility located in Santa Barbara County.

C. Illegal Discharge

Due to the absence of a centralized oil field waste disposal facility close to oil industry production areas in Ventura County, the number of illegal dumpings of oil field waste may have risen (Reference 12-9). State solid waste regulations allow temporary storage of some oil field waste onsite, in sumps or pits. "Temporary" storage of more difficult to control waste may occur.

D. Data

There is a lack of data regarding the amount of oilfield waste generated in the Santa Barbara Channel which may impact Ventura County. Detailed information is needed on types of wastes, including wastes derived from enhanced oil recovery methods, projected waste volumes, and probable method and place of disposal.

E. Alternative Technological Processes

Based on available information, non-hazardous oil field waste treatment processing has considerable potential. Explicit support for proven oil field waste treatment technologies is warranted.

F. Simi Valley

The Simi Valley landfill is not a candidate as an oil field waste disposal site.

G. Combined vs. Separate Site

Both separate and combined siting alternatives are valid, if the proposed site in question is proven viable.

12.5 RECOMMENDATIONS

A. Provide for the Proper Treatment and Disposal of Oil Field Waste

Identify suitable locations for establishing a centralized treatment and disposal facility for nonhazardous oil field waste generated within Ventura County. This may be either a separate site or in combination with a municipal waste landfill. Ventura County's oil industry is a major County industry. It is estimated that at least 75% of the oil field waste requiring disposal is nonhazardous, but requires special handling at the disposal site and requires a specially permitted disposal area. The need for a local oil field waste treatment/disposal facility is evident. The need for additional landfill space for municipal waste is also evident.

Responsible Agencies: Ventura County Planning* and Environmental Health Divisions, VRSD, major producing oil companies, private disposal site owners and operators.

Estimated Resources Required: This will occur as part of the CoSWMP process.

* Indicates the lead agency.

B. Encourage Use of Proven Non-Hazardous Oil Field Waste Treatment Processes

Technological processing of non-hazardous oil field wastes has considerable potential to transform such non-hazardous wastes in either saleable products or materials that can safely be landfilled in a municipal waste landfill. Explicit support for proven treatment technologies and experimental programs is warranted.

Responsible Agencies: Ventura County Planning* and Environmental Health Division, VRSD, and oil companies.

Estimated Resources Required: This will occur as part of the CoSWMP process.

Schedule: Short and mid-term planning period.

Schedule: Short and mid-term planning period.

C. Continue to Coordinate With Oil Industry

Coordinate with local oil companies and keep them informed of CoSWMP status. Coordinate any decisions affecting oil field waste disposal site selection with them. Since the closure of the major oil field waste disposal site in the County, the industry is actively concerned with the location of a new approved site.

Responsible Agencies: Ventura Regional Sanitation District (VRSD)*, Ventura County Planning and oil industry representatives.

Estimated Resources Required: This task will occur as part of the CoSWMP process.

Schedule: Short and mid-term planning period.

D. Offshore Oil Field Waste Study

Initiate a study of offshore oil field waste production in the Santa Barbara Channel.

Oil field exploration and production activity offshore is increasing. It would benefit Ventura County efforts to initiate a study of offshore waste management practices and determine the amount and types of the waste generated in the Santa Barbara Channel. Coordination with the oil industry, neighboring coastal counties, and appropriate State and Federal agencies (i.e. California Division of Oil and Gas, Minerals Management Services, etc.) will be required, as well as utilizing other sources of information, which will aid in understanding the effects of waste generated and disposed offshore. The study would provide detailed information on projected waste volumes, types of waste, and probable method and place of disposal.

Responsible Agencies: Ventura County Planning* in coordination with oil industry representatives, and appropriate State and Federal agencies.

Estimated Resources Required: This task would require one full time person for approximately two to three months.

Schedule: Short term planning period.

* Indicates the lead agency.

E. Continue to Collect Oil Field Waste Data Generated Onshore

Continue to collect and analyze the amount and types of oil field wastes generated onshore, including new types of wastes generated from enhanced oil recovery methods in Ventura County.

Responsible Agencies: Ventura County RMA Planning Division* in coordination with the oil industry and appropriate State and Federal agencies.

Estimated Resources Required: This task will occur as part of the CoSWMP process.

Schedule: Short term planning period.

* Indicates the lead agency

CHAPTER XIII - SOLID WASTE FACILITIES DESCRIPTIONS

13.1 INTRODUCTION

Title 14 of the California Administrative Code, requires that counties provide detailed descriptions of all solid waste facilities within their jurisdictions or boundaries, and include these descriptions within the County Solid Waste Management Plan. Therefore, this chapter provides descriptions of currently operating solid waste facilities, facility closures, expansions of existing facilities, and proposed new facilities. Table XIII-1 provides summary information concerning all existing and recently closed facilities.

13.2 CURRENTLY OPERATING FACILITIES

A. Landfill Sites

1. Privately Operated Sites

- a) Simi Landfill Site - On January 9, 1983, Chemical Waste Management, Inc., purchased and initiated operations at the Simi Landfill Site. Site operations were transferred to Waste Management, Inc. another Division of the same corporation, in mid-1984. The 230 acre Simi site is on land zoned Rural Agricultural and is operated under Solid Waste Facility Permit No. 56-AA-007 and Conditional Use Permit (CUP) No. 3142 both issued by Ventura County. It is located at 111 Los Angeles Avenue in Simi Valley, north of the Simi Valley Freeway approximately $\frac{1}{2}$ mile west of the intersection of Madera Road and the site access road (Assessor Parcel Nos. 615-150-23 and a portion of 615-160-015). Simi is designated a Class II landfill, which accepts both Group 2 (refuse) and Group 3 (construction debris, etc.) wastes. In addition, sewage sludge cake from various treatment plant operations are accepted.

The total waste handled in 1983 was approximately 205,015 tons. This site serves Simi Valley, Moorpark, Thousand Oaks, and Oak Park. Based upon a recent "air space" analysis, Simi landfill is expected to reach capacity as early as February 1, 1989. However, the site operators have indicated they plan to apply to expand the site, which could increase waste disposal capabilities an additional 30 years.

- b) Getty Landfill (Site C) This site is a small, 1 acre, private municipal waste landfill, located in Hall Canyon, approximately $.2\frac{1}{2}$ miles east of the intersection of School Canyon Road and Ventura Avenue (at the terminus of School Canyon Road) near the City of Ventura (Assessor Parcel Nos. 64-090-04, and a portion of 64-150-09 and 64-160-17). The existing zoning is A-E (Agricultural Exclusive). The capacity of this site is estimated to be approximately 25,000 cubic yards. The property owner presently leases this site to the landfill operator, which is the Getty Oil Company. This site takes only Group 2 and 3 wastes, such as wood, metal, rubber, earth, plastics, rock, and concrete generated from Getty operations and is expected to continue operating well into the future, due to the small amount of waste deposited. In 1982, Getty landfill received 60 tons of waste. This site operates under solid waste facility permit Number 56-AA-009 issued in 1974, and has an expected life of 75 years.

2697

TABLE XIII-1
SUMMARY OF DISPOSAL FACILITIES

FACILITY	SOLID WASTE FACILITY PERMIT NO.	ASSESSOR'S PARCEL NO.	SIZE	CONDITIONAL USE PERMIT (CUP) NO.	TYPES OF WASTE	1982 TONNAGE RECEIVED (TONS)	AREA SERVED	VEHICULAR LIFE EXPECTANCY	TRIPS PER OPERATING DAY
<u>A. Existing</u>									
Simi Landfill	56-AA-007	615-160-09 615-160-15	230 Acres	CUP-3142	Group 2 and 3 Sludge Cake	159,202	Eastern Wasteshed	years	257
Getty Landfill	56-AA-009	64-090-04 64-150-09 64-160-17	1 acre (for refuse waste) 33 acres (for oilfield waste)	CUP-35	Group 2 and 3	60	Getty Oil Property	75 years	
Toland Road Landfill	56-AA-005	41-140-07	120 acres	CUP-3141	Group 2 and 3 Sludge Cake	17,650	Central Wasteshed	100 years	50
Coastal Landfill	56-AA-004	138-190-15 138-190-16	118 acres	SUP-763	Group 2 and 3	384,237	Western Wasteshed	4 years	478
Ozena Modified Landfill	56-AA-006	02-14-45	10.2 acres	In process of obtaining new permit	Group 2 and 3	1,147	Northern Wasteshed	17 years	13
Beardsley Landfill	56-AA-010	152-01-07	20 acres	None (City of Camarillo does not require CUP)	Group 3	3,760	Camarillo	25 years	Unknown
Pacific Missile Test Center Site	56-AA-008	San Nicholas Island	25 acres	None (Federal Jurisdiction, No CUP required)	Group 2 and 3	14,687	U.S. Naval Facilities	8 years	Unknown
Camarillo Transfer Station (Anti- Litter)	56-AA-001	230-03-12	5 acres	Industrial Planned Permit No. 10 (City of Camarillo)	Group 2 and 3	9,568	Camarillo	Ongoing	63
Ojai Transfer Station (Anti- Litter)	56-AA-002	32-07-07	5 acres	Legal non- conforming use	Group 2 and 3	2,522	Ojai	Ongoing	97
Piru Transfer Station (Anti- Litter)	56-AA-003	57-05-09	5 acres	Legal Non- Conforming Use	Group 2 and 3	429	Piru	Ongoing	33
Getty Oil Company Sites A and B	56-AA-0119	64-090-04 64-150-04 64-160-17	33 acres	CUP-35	Group 2 Oilfield Wastes	10,027	Getty Oil Company Operations	75 years	Unknown
Shell Oil Company (permit pending)		60-310-15 60-310-16	8 acres	CUP-19 Oilfield Wastes	Group 2	Unknown	Shell Oil Company Fields	5 years	Unknown

2. Ventura Regional Sanitation District Operated Sites

- a) Toland Road Landfill - The 120 acre Toland Road Site is leased by VRSD and is located at 3500 North Toland Road, is at the northerly terminus of the road. The site is three miles west of Fillmore and 3½ miles northeast of the City of Santa Paula (located on a portion of Assessor Parcel No. 41-140-07). This is a municipal waste site on land zoned Rural Agricultural. It serves the communities of Fillmore, Santa Paula, and Piru. The Toland Road site is operated under Conditional Use Permit No. 3141 and Solid Waste Facility Permit No. 56-AA-005. The site receives non-hazardous waste including empty, triple rinsed pesticide containers and dry sewage sludge cake. The total waste handled at the site in 1982 was approximately 56 tons per day (17,650 tons per year). There are an average of 50 vehicular trips to the site each operating day. Estimated total waste handled for 1982 was approximately 17,650 tons. Life expectancy for the Toland road site is estimated well beyond 100 years at the present waste generation rate, with an estimated remaining capacity of 6 million cubic yards of waste.
- b) Coastal Landfill - This 118 acre municipal waste site is on land zoned Rural Agricultural, and is an extension of the closed Santa Clara Site. It is located near Gonzales Road in Oxnard, (Reference XIII-2) approximately 500 feet east of its intersection with Victoria Avenue, adjacent to and south of the Santa Clara River (Assessor Parcel Nos. 138-190-15 and 138-190-16). This site is leased by VRSD and serves the western watershed area which includes the cities of Oxnard, Port Hueneme, Ventura, Ojai, Camarillo, and the surrounding unincorporated area. This site has an approximate life of four years, and an estimated remaining capacity of 12.4 million cubic yards of refuse. There are approximately 478 vehicular trips to the site each operating day (half are commercial waste trucks and half are private vehicles). The site received approximately 1,500 tons of refuse per day (384,237 tons in 1982), and is expected to be closed by 1986. This site is operated under Solid Waste Facility Permit No. 56-AA-004 and Special Use Permit No. 763 issued by the City of Oxnard.
- c) Ozena Modified Landfill - This 40 acre modified landfill is on land zoned Rural Exclusive. The site is located in Lockwood Valley, adjacent and south of Lockwood Ozena Road, approximately 2½ miles east of Highway 33 (Assessor Parcel No. 02-14-45). The site is owned and operated by the Ventura County Regional Sanitation District, under Solid Waste Facility Permit No. 56-AA-006 and is actually a combination landfill and drop-box. The County of Ventura authorized the operation of the site under Conditional Use Permit No. 3417. VRSD maintains the drop-box container station at Ozena. This site handles refuse generated by the visitors to the national forest area, as well as the few permanent residents. The 40 cubic yard drop-box is located just outside the district-owned and operated Class II sanitary landfill. When the drop-box is full, waste is brought into the landfill, then compacted and covered. The frequency of disposal varies throughout the year, because of seasonal use of the recreational area. Ozena landfill has approximately 400,000 cubic yards of capacity and at the present

rate of disposal 4.5 tons per day (1147.5 tons per year). There are approximately 13 vehicular trips to the site each operating day and at the present waste generation rate this site could provide service for approximately 17 years.

3. City Operated Sites

Beardsley Landfill - The City of Camarillo owns and operates the 20 acre Beardsley Landfill Site, located at Mariano and Beardsley Roads in Camarillo (Assessor Parcel No. 152-01-07). The existing zoning is Rural Exclusive. This site is used by the City of Camarillo for disposal of Group 3 wastes, including street cleanings and debris from road construction and repair work. The site is operated under Solid Waste Facility Permit No. 56-AA-010 and is restricted to city agency use only. A Conditional Use Permit is not required by the City of Camarillo. The site is estimated to have a capacity of approximately 200,000 cubic yards, with a remaining site life estimated at 25 years.

4. Military Disposal Site

The Navy's Pacific Missile Test Center operates a Class II landfill on San Nicholas Island under Solid Waste Facility Permit No. 56-AA-008. This site is approximately 25 acres in size and receives Group 2 and Group 3 wastes generated from military operations on the island and is operated and owned by the Federal Government. Site capacity is approximately 250,000 cubic yards. The site life is estimated to be approximately 8 years. This facility also contains metal storage areas for the collection and recycling of aluminum.

B. Transfer/Processing Facilities

1. VRSD Operated Transfer Facilities

The Ventura Regional Sanitation District (VRSD) operates three solid waste transfer facilities at separate locations throughout the County. These transfer facilities are also called anti-litter stations. They are designed to encourage homeowners to bring in household wastes such as gardening wastes, household refuse, etc. They are leased and operated primarily on the weekends for the purpose of litter management. Materials that can potentially be recycled or can be sent to VRSD disposal sites are handled at these sites. More details concerning the operation of these transfer facilities can be found in the Litter Management Chapter VI.

- a) Camarillo Transfer Station (Anti-Litter) - This transfer station is approximately 5 acres in size and situated on land zoned M-1 at the Camarillo Airport in the City of Camarillo, 950 feet north of Pleasant Valley Road and 1,700 feet westerly of the west entrance to the Airport on County owned property (a portion of Assessor's Parcel No. 230-03-12). This facility is operated on weekends, primarily for nearby residents who conduct clean up operations on their own property, and require a place to dispose of these materials. This site has been permitted since 1977 and handles approximately 400 cubic yards per operating day. There are approximately 63 vehicular trips to the facility each operating day. This transfer station is

operated by the VRSD under Solid Waste Facility Permit No. 56-AA-001 and Industrial Planned Development Permit No. 10, issued by the City of Camarillo.

- b) Ojai Transfer Station (Anti-Litter) - This transfer station is located on land zoned Rural Agricultural and is adjacent and north of Baldwin Road between Rice Road and Burnham Road, across from the County Honor Farm (a portion of Assessor Parcel No. 32-07-07). It provides litter management, brush shredding and resource recovery for the Ojai area. This facility is approximately 5 acres in size and handles approximately 450 cubic yards per operating day of materials, some of which can be recycled. There are approximately 97 vehicular trips each operating day. Waste materials are disposed at district landfills. This facility is leased and operated by the VRSD under Solid Waste Facility Permit No. 56-AA-002. No County of Ventura Conditional Use Permit has been issued, as this facility operates as a "non-conforming" use.
- c) Piru Transfer Station (Anti-Litter) - This transfer station is located at 208 Torrey Road on land zoned Rural Agricultural. It is adjacent to and east of Torrey Road, approximately 800 feet south of the intersection of Torrey and Howe Roads (Assessor Parcel No. 57-05-09). This is a 5 acre transfer station, located on County owned property and which handles approximately 220 cubic yards of materials. There are approximately 33 vehicular trips per operating day. The district operates this transfer facility under Solid Waste Facility Permit No. 56-AA-003. It basically provides litter management services for the Piru area.

C. Oil Field Waste Land Farms

The State Department of Health Services has determined on a case by case basis, that some oil field wastes are non-hazardous, and therefore require disposal sites accepting these wastes to have a solid waste facility permit from the California Waste Management Board. Currently, some oil companies are awaiting decisions from the Department of Health Services as to whether their waste is hazardous or non-hazardous. Therefore, these companies may, in the future, apply for solid waste facility permits.

Currently, one oil company has an application pending and one oil company has recently been issued a Solid Waste Facility Permit. These sites include the following:

1. Shell California Production, Inc.

Shell California Production, Inc. operates two land farms at locations within its Ventura oil field, under County of Ventura pending Solid Waste Facility Permit No. 56-SS-013 and Conditional Use Permit No. 19. These Land Farms are located on Assessor Parcel Nos. 60-300-02 thru -06 and 60-310-15 and -16. The existing zoning is R-A-5Ac and R-A-10Ac. These sites accept drilling muds, diatomaceous earth and other non-hazardous oil field wastes generated from company operations.

2. Getty Oil Company Sites A and B

Getty Site A is a 3 acre land farm with a total estimated capacity of 4,840 cubic yards. This site is located in School Canyon and handles a

maximum of 30 tons of non-hazardous oil field wastes per operating day. Site B is a 30 acre land farm located on Hall Canyon Road. This site handles an average of 37 tons of non-hazardous oil field waste a day. The site capacity is estimated at 48,400 cubic yards with a site life of 54 years. There are an average of 1.39 vehicular trips to the site per operating day. Both sites are operated under Solid Waste Facility Permit Number 56-AA-0119 and Conditional Use Permit No. 35, issued by the County of Ventura. These sites are privately operated Class II disposal facilities on leased land (part of Assessor Parcel Nos. 64-090-04, 64-150-04 and 64-160-17). The existing zoning is A-E (Agricultural Exclusive).

These sites can operate 7 days per week during daylight hours. The types of waste received are: tank bottom sediments, drilling muds and cuttings, diatomaceous earth, work over and redrilling materials, and other non-hazardous oil field wastes. The composite of these materials have been declared non-hazardous by the DOHS (Refer to DOHS letter of June, 1982).

13.3 FACILITY CLOSURES

There are 42 disposal sites that have closed between 1944 and 1983. The general location of these sites are provided in Figure XIII-1. The more recent site closures are described below (Table XIII-2).

A. Santa Clara Landfill

In 1982, the VRSD initiated closure of the Santa Clara Landfill (Wagon Wheel Site), which is located between Ventura Road and Victoria Avenue in Oxnard (Assessor Parcel No. 179-0-040-050, and -060). The existing zoning is Rural Agricultural. This 162 acre site was originally opened in 1962, and had a capacity of approximately 1.65 million cubic yards (reference XIII-2). Prior to closure, this site was operated under Solid Waste Facility Permit No. 56-AA-04 and Special Use Permit No. 763 issued by the City of Oxnard in 1978. It handled approximately 1,500 tons of municipal solid waste per operating day and served the cities of Oxnard, Ventura, Port Hueneme, Ojai and parts of Camarillo. With the final closure of this site in 1983, the City of Oxnard is planning to build a golf course on the land, and recover methane from the fill for sale to Southern California Edison Company. When this site closed, VRSD transferred its operations further west to the Coastal site.

B. J.N.J. Disposal Facility (Oil Field Waste)

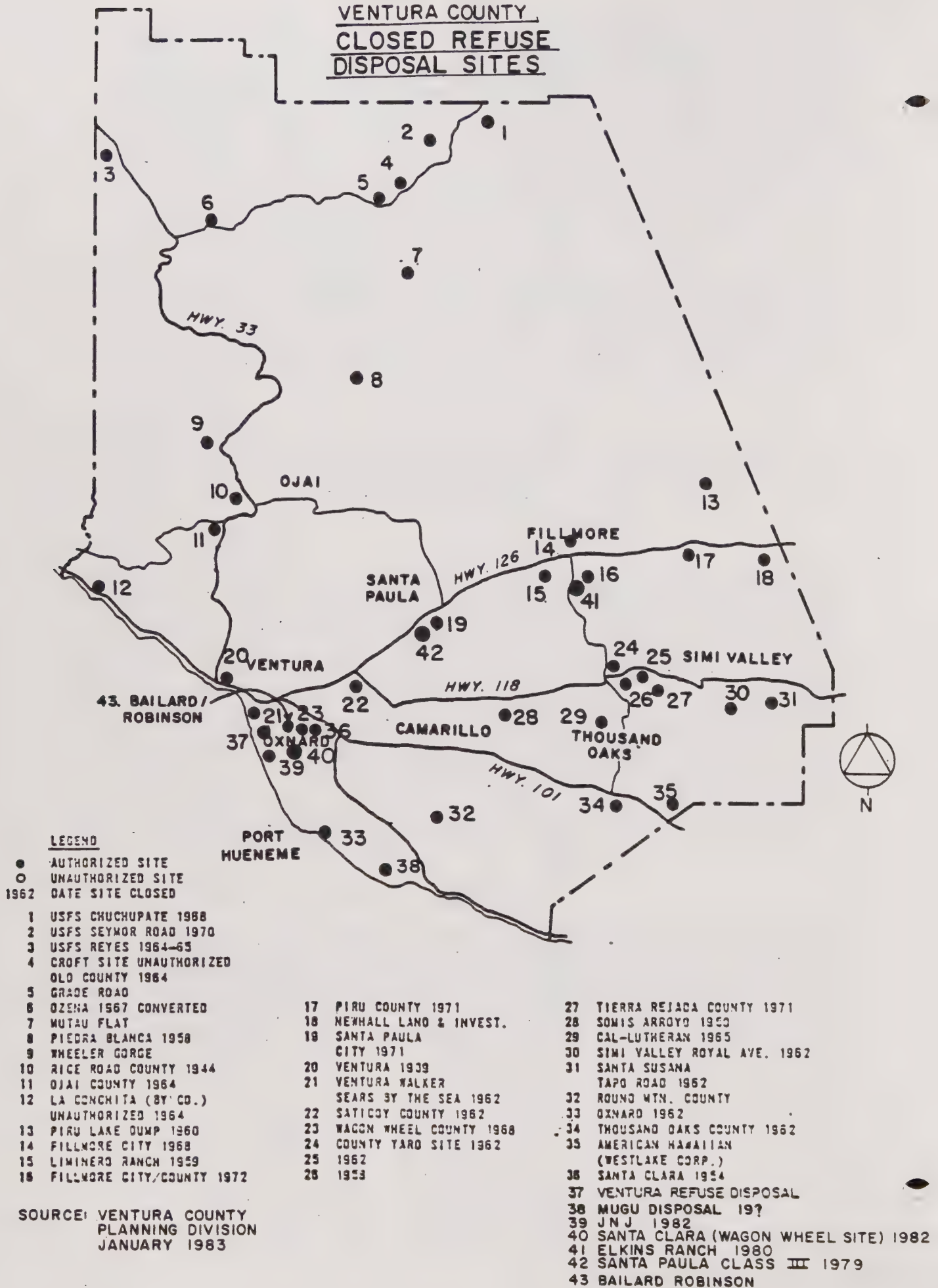
Until February 2, 1982, most oil field waste produced in Ventura County which required off-site disposal was disposed of at the J.N.J. Oil Field Waste Disposal Facility. It was located at the northeast corner of the intersection of Harbor Boulevard and West Fifth Street in Oxnard (Assessor Parcel Nos. 183-01-33, -44). The site was and is zoned Open Space. This site was operated under Solid Waste Facility Permit 56-AA-044 and Conditional Use Permit No. 306 (formerly CUP-3058) from the County of

TABLE XIII-2
SUMMARY OF CLOSED DISPOSAL FACILITIES

FACILITY	SOLID WASTE FACILITY PERMIT NO.	ASSESSOR'S PARCEL NO.	SIZE	PERMIT NUMBER	TYPES OF WORK	AREA SERVED	CLOSED DATE
<u>B. Closed</u>							
Santa Paula City Class III Disposal Facility	56-SS-036	104-180-095	33 acres	(City Permit)	Class III wastes	Santa Paula	1979
Santa Clara Landfill	56-AA-04	179-040-05 179-040-06	162 acres	SUP-763	Group II and II wastes	Western Wasteshed	1982
JNJ (Oil Field Waste) Disposal Facility	56-AA-044	183-010-33 183-010-34	75 acres	CUP-306	Group II-1 wastes	Santa Barbara Channel Area	1982
*Elkins Ranch (Oil Field Waste) Disposal Facility	No solid waste facility permit required	500-020-08 500-060-03	220 acres	CUP-463	Group II-1 wastes	Santa Barbara Channel Area	1980

*Facility closed prior to requirements to have a solid waste facility permit.

FIGURE XIII-1
VENTURA COUNTY
CLOSED REFUSE
DISPOSAL SITES



Ventura. Approximately 400 to 500 thousand barrels a year was formerly disposed of at this site (reference XIII-3). Since there is presently no major oil field waste in Ventura County, the waste is now being transported to sites in other counties because there is presently no central oil field waste disposal site in Ventura County available to the oil industry. As mentioned earlier, two oil companies maintain small private land farms for their own waste.

C. Elkins Ranch Disposal Facility (Oil Field Waste)

The Elkins Ranch Oil Field Waste Disposal Facility was located approximately 3,000 feet south of Guiberson Road, 1,500 feet east of the Elkins Golf Course and 2½ miles southeast of the City of Fillmore (Assessor Parcel Nos. 500-020-08 and 500-060-03). The existing zoning is Rural Agricultural. The disposal facility, operated since the mid-1950's, has received wastes generated from the development of oil and gas wells in the general area, such as drilling muds, formation waters, drill cuttings, tank bottoms solvents, and residual oil. In early 1980, the Elkins Ranch Company elected not to apply for renewal and extension of their Conditional Use Permit No. 463. This site did not have a Solid Waste Facility Permit since it was closed before the permit process was implemented. As such, the site has been formally closed since late 1980. At present, the land surrounding the waste disposal site is used by the Elkins Ranch Company as a cattle range. Based on amounts received in 1973, which are considered typical, approximately 166,600 barrels of waste were deposited at the site annually (653 barrels per day). The monthly amount varied from 3,000 (141 per day) to 27,000 (1,271 per day) barrels, depending on the level of oil field activity. A Preliminary Geological Assessment was prepared in 1982 to assist the Elkins Ranch Company in the preparation of a site closure plan consistent with the guidelines established by the California Regional Water Quality Control Board.

D. Santa Paula City Class III Disposal Facility

This site was operated as a public disposal site by the City of Santa Paula on a parcel of land comprising 33 acres, lying southwesterly of the southern terminus of Borkle Street within the City of Santa Paula (Assessor Parcel No. 104-180-095). The existing zoning is mostly Open Space with a portion of the site zoned M-1 (Manufacturing). Because of the proximity of the Santa Clara River, only 9 acres were utilized for actual disposal purposes. The disposal site was divided into two areas. One area received refuse including paper, metals, cloth and lawn clippings which were disposed of by salvage or burning. The second area received earth, rocks, broken concrete, large tree stumps, and other non burnable material. The City disposed of approximately 150 tons of burnable refuse at this site each week. There were no records of the quantities of refuse disposed of by private individuals, or the quantity of inert materials disposed of at the site. This disposal site was a Class III site which operated under Solid Waste Facility Permit No. 56-SS-036 issued during 1977. This site functioned mainly as a disposal site for the City's maintenance and Capital Improvement Projects for two years and it had an approximate capacity of 900 tons. It was closed on August 30, 1979.

13.4 EXPANSIONS OF EXISTING FACILITIES (See Figure XIII-2)

A. Bailard Landfill

The Bailard Landfill Site will be reopened. It is located on land zoned Rural Agricultural. This landfill was formerly operated by Robinson Services on leased land. This site is currently being prepared for use as planned for in the 1976 County Solid Waste Management Plan. VRSD has obtained all required local permits including County of Ventura Conditional Use Permit No. 3650 and Solid Waste Facility Permit No. 56-AA-011, issued in June, 1982. The 160 acre operational portion of the Bailard Landfill Site has an estimated capacity of 5.5 to 5.8 million cubic yards and is intended to be a municipal waste site for disposal of Group 2 and 3 wastes (Reference XIII-4). The site is located adjacent to and south of the Santa Clara River, approximately 1,500 feet west of the Victoria Avenue Bridge, in the unincorporated area of the County. This property encompasses Assessor Parcel Nos. 138-190-02 and -09. The site will serve the western waste shed area including Oxnard, Port Hueneme, Ventura, the Ojai Valley, Camarillo and the North and South Coast communities. The site life is approximately 4 to 5 years, beginning from the expected closure of the Ventura coastal site in 1986. The Bailard site is expected to close in 1992. When the site is closed, it may be designated Open Space and used for recreational purposes. VRSD is planning to accept oil field drilling muds on a portion of the site on an experimental basis to test the feasibility of stabilizing oil field muds using the Chemfix Process. This project would be conducted by a private contractor and would require an experimental permit issued by the DOHS. This experimental operation would also require local permits.

B. Simi Landfill (Figure XIII-2)

Waste Management, Inc., the present operators of the 155 acre Simi landfill site, have proposed to modify lift elevations to provide approximately 3.5 million cubic yards of additional disposal for refuse, thereby extending the life of the landfill site approximately 25 years beyond its current projected closure date (1986).

13.5 PROPOSED NEW FACILITIES

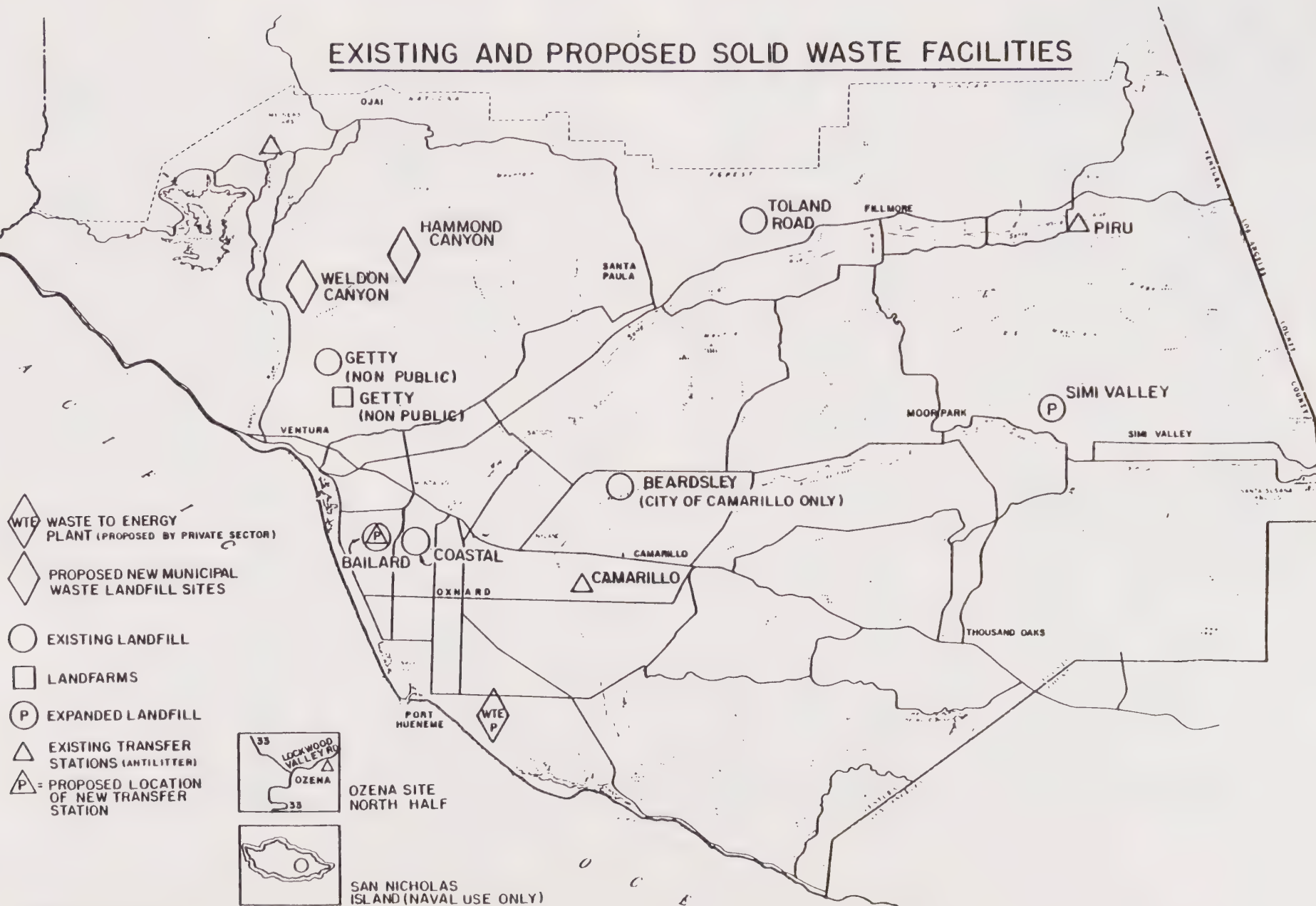
A. Municipal Waste Landfill Site

One of the major objectives of the update of the Ventura County Solid Waste Management Plan is to identify tentative waste municipal waste disposal sites to serve the western wasteshed. During the CoSWMP update process, the County developed Site Evaluation Criteria for evaluating tentative solid waste disposal sites. Site evaluation criteria and descriptions of potential sites are provided in detail in Chapter XIV. No new landfill can be placed into operation without the approval of a number of local, regional, and state agencies. Any new landfill will also be required to conform to the County's Solid Waste Management Plan, the General Plan, and local zoning ordinance.

The new landfill would provide disposal service for 35 to 50 years for waste generated in the western wasteshed and would replace the Santa Clara Coastal and Bailard sites.

EXISTING AND PROPOSED SOLID WASTE FACILITIES

FIGURE XIII-2



SOURCE: VENTURA COUNTY PLANNING DIVISION 1984

B. Waste-To-Energy Plant

A private firm had proposed a waste-to-energy plant adjacent to Southern California Edison's (SCE) Ormond Beach Generating Station in Oxnard. The proposal is no longer active because the proponent, Energy Conversion Systems, experienced financing problems. However, the possibility exists that another proposal may evolve within the near future, as VRSD (who would supply the waste), and SCE (who would benefit from the fuel derived), continue to be very interested in such a project. A successful project can process a minimum of 180,000 tons of municipal solid waste per year, and up to 1,060 gallons of wastewater per ton of waste processed. A study by the United States Conference of Mayors of feasibility of waste-to-energy projects in general in Oxnard, was ongoing as of November, 1984.

C. Solid Waste Transfer Facility

A new solid waste transfer facility is proposed to be established within the western watershed. This transfer facility is needed in order to minimize the cost of transporting waste to a new (distant) western watershed site. The Bailard Landfill site would be a viable location for this facility. The transfer facility would be designed to handle at least 1,500 tons of refuse a day, from the Cities of Oxnard, Port Hueneme, Camarillo, and Ventura. This transfer facility would require approximately 5 acres of land and could provide for resource recovery. Refuse could be compacted at the facility and packer vans would be used to transport refuse to the new solid waste disposal site.

D. Oilfield Waste Disposal Site

No specific oilfield waste disposal sites are identified in this Solid Waste Management Plan. The need for a local site is recognized, however, be it in combination with a municipal waste landfill or at a separate location.

Any oilfield waste disposal site must meet State Water Quality regulations as set in Subchapter 15 of Title 23 of the State; Administrative Code. In addition to approval of a number of local, regional and State agency permits, any oilfield waste disposal site would also require an amendment to the County Solid Waste Management. Such an amendment could be processed in conjunction with processing of required local and other permits.

13.6 FINDING AND RECOMMENDATION

A. Specific Locations of Many Old Closed landfills Are Not Known, Nor is Their Present Land Use (which Could be Incompatible)

Recommendation: Develop an appendix to the CoSWMP as part of the implementation phase. This appendix will be comprised of a records search identifying specific locations of old sites and present land use.

Responsible Agencies: Ventura County Planning Division* coordinating with VRSD, Ventura County Waste Haulers Assoc., Cities, Ventura County Environmental Health Division, Ventura County Historical Society.

Estimated Resources Required: One staff person for approximately 160 hours.

Schedule: Short term planning period.

* Indicates the lead agency.

CHAPTER XIV
DISPOSAL SITE EVALUATION

14.1 INTRODUCTION

General criteria for classifying solid waste disposal sites (waste management units) is provided in State regulations (California Administrative Code, Title 23, Subchapter 15 Reference XIV-1) and Federal regulations (40CFR 257) (Reference XIV-2). However, the State Water Quality Control Board staff has prepared revised regulations governing non-sewerable waste disposal to land. This effort has resulted in significant changes to previous regulations enforced under California Administrative Code Title 23, Subchapter 15 (Reference XIV-37). This document has been modified as necessary to reflect these changes.

Recently, the State Water Resources Control Board (SWRCB) released revisions to the final proposed California Administrative Code, Title 23, Subchapter 15. The final proposed regulations prepared by SWRCB staff provides a new classification system for waste management units (sites), and minimal siting criteria (Reference XV-1). Under the new classification system the following site designations would apply.

- o Class I - Waste management units for hazardous waste
- o Class II - Waste management units for designated waste (previously Class II - 1 site)
- o Class III - Waste management units for non-hazardous solid waste (previously II-2 refuse sites)

This revised Subchapter 15, SWRCB criteria for classifying waste management units (as of October, 1984) are summarized herein. These regulations state that natural site characteristics will be used to determine whether a specific site is suitable for use as a classified waste management unit (Class I, II or III). However, the regulations should be referred to for a more complete detailed description of siting criteria developed by SWRCB since this general summary does not identify all the exceptions to the requirements. A copy of the more stringent waste regulations can be obtained from SWRCB by calling the office of Chief Counsel at (916) 322-7732 or by writing to:

State Waste Resources Control Board
901 "P" Street
P.O. Box 100
Sacramento, CA 95801

Since these regulations only provide minimal criteria for identifying and selecting suitable locations for disposal sites, these regulations allow regional water quality control boards, cities, counties, and other jurisdictions to adopt and enforce higher standards for the protection of water quality in connection with the disposal of waste. The general policy of the Regional Water Quality Control Board states that all liquid and solid waste disposal sites must be situated, designed and operated to provide protection to surface and ground waters so as not to degrade the quality of usable groundwater (Reference XIV-3). The criteria presented in this chapter and used in selecting tentative sites are consistent with this policy.

The California Waste Management Board (Reference XIV-4) has advised counties to develop siting criteria, in order to locate appropriate solid waste facility sites (i.e. landfills) during the CoSWMP update. Also counties are advised to provide guidelines for reviewing solid waste facility sites which are proposed after any CoSWMP update process has been completed. These guidelines further state, that due to the difficulty of mitigating all impacts, landfills should not be placed near structures where methane gas may accumulate, where usable surface and ground water cannot be protected, or on active faults. The CoSWMP disposal site selection process used in Ventura County was developed to ensure that California Waste Management Board guidelines and State Water Resources Control Board Regulations are properly implemented. In Ventura County, Planning staff worked closely with local citizens, public interest groups, and industry representatives to develop an explicit site selection process. One of the major goals of this effort was to create a system that would clearly define factors to be considered, weighted and used in judging the suitability of potential landfill sites.

Participants working through the CoSWMP Planning process created a three step process (Table XIV-1) which includes an initial assessment (Step 1), site rating (Step 2) and final site selection (Step 3). This process is based on similar processes successfully used by San Bernardino County, Fresno County, and other counties throughout the United States. (References XIV-4 and XIV-5 and XIV-6).

While of major if not critical importance, the process of identifying new disposal sites is only a part of the overall CoSWMP program. The ultimate objective is to provide for responsible overall management of solid waste, generated on a waste shed by waste shed basis throughout the County. In addition to identifying suitable locations for landfill sites in order to maintain adequate disposal capacity for future, CoSWMP program efforts are also aimed at establishing resource recovery programs, and developing alternatives to landfilling (such waste to energy plants). Therefore the reader is urged to review Chapter IV in order to become familiar with overall CoSWMP efforts in resource recovery and waste to energy in addition to identifying landfills for future use.

The major factor in the development and application of this evaluation process, was to identify "naturally suited" locations for establishing a municipal waste landfill site. For example, a levee can be used to protect a site from a 100-year flood. However, this mitigation measure is expensive, and it entails some level of risk if the mitigation was to fail. Such mitigation is not necessary if the site selected exists outside the flood plain. Selecting the most "naturally suited" sites reduces environmental impacts, reduces overall cost of landfill development, simplifies project development, and minimizes risk of adverse impacts if mitigation fails. .

Specific information relative to topography, geology, hydrology, and seismology are provided in the CoSWMP Physical Features, Chapter III. The reader is urged to become familiar with Chapter III prior to utilizing the site evaluation criteria, since information in that Chapter is relevant to applying the disposal site criteria provided herein. In addition, a list of maps used for identifying site characteristics for the evaluation process, is provided in Table XIV-2.

TABLE xIV-1

SUMMARY OF CoSWMP SITE EVALUATION PROCESSINITIAL ASSESSMENT
(Step 1)Site Identification

A total of 38 potential landfill sites were identified from the following sources: the 1976 COSWMP, site proponents, the (technical) Solid Waste Coordinating Committee, and the (citizens) "Countywide Planning Program" Solid Waste Management Subcommittee

Project Constraints Analysis

Of the 38 sites evaluated by County staff, 9 sites were not located in the appropriate watershed (project constraint 1a). Therefore, they were excluded from further consideration.

Critical Factors Analysis

Of the remaining 29 sites evaluated by staff, 23 were found to contain critical on-site factors and were excluded from further consideration. Six sites were advanced to Step 2 for rating:

- o Aliso Canyon-Willoughby Rd.
- o Hall Canyon
- o Hammond Canyon
- o Manuel Canyon
- o School Canyon
- o Weldon Canyon

SITE RATING
(Step 2)Primary Site Rating

All 6 sites passing the initial assessment (Step 1) were preliminarily rated by staff and the two committees using the CoSWMP "primary site" rating criteria. Information for rating sites was obtained from available County maps and reports. Weightings for specific factors were developed by the two committees.

Secondary Site Rating

A "secondary site" rating was made based on site visits. Again, both committees worked with staff to rate sites and assign weights to each factor. One site, Hammond Canyon, could not be given a Secondary Site rating, because it's owners opposed it's consideration as a landfill and would not allow access to the property.

Composite Scoring & Ranking

For each of the six sites both primary(*) and secondary(**) site rating scores were compiled. Three candidate sites were advanced to Step 3 for further evaluation. Composite Scores for the six sites rated are provided below:

1. Weldon Canyon - 353 (220*/133**)
2. Aliso Canyon - Willoughby Road - 382 (149/233)
3. School Canyon (Canada de San Joaquin) - 478 (309/169)
4. Manuel Canyon - 499 (320/179)
5. Hall Canyon - 547 (255/292)
6. Hammond Canyon - (240/?)

SUMMARY OF CoSWMP SITE EVALUATION PROCESS (Con't)

FINAL SITE SELECTION
(Step 3)

<u>Data Review</u>	<u>Site Reconnaissance</u>	<u>Site Selection</u>	<u>Preliminary Site Characterization</u>	<u>Evaluation Report</u>
A consultant reviewed available information on the top three sites selected in Step 2.	The consultant conducted site reconnaissance visits at the three sites, to verify existing data, determine usable land area, site capacity, and site specific hydrologic and geologic characteristics. Based on the site reconnaissance visit, the following site was excluded due to insufficient site size: o School Canyon (Canada de San Joaquin)	Based on the results of the consultant's site reconnaissance evaluation, and County staff recommendations, two sites were selected for further study: 1. Weldon Canyon 2. Aliso Canyon-Willoughby Rd.	The consultant conducted a site specific geologic and hydrologic investigation at the remaining two alternative sites, which included: o well drilling and installation o soil sampling and analysis o ground water and surface water sampling and analysis	The consultant then prepared a report evaluating the sites (which is included in Appendix D).

Source: Ventura County Planning Division 1983 (Rev. 1984)

TABLE XIV-2
SOURCES OF INFORMATION

<u>Information</u>	<u>Reference</u>	<u>Source</u>
Roads	Road Maps and Utilities	Ventura County Public Works Agency
Streets	<u>Ventura County Popular Street Atlas</u>	Thomas Bros. January 1982
Topography	USGS Quadrangle Maps and Aerial Photographs	United States Geological Service
Land Use	City, Area, and County General Plans	Ventura County RMA Planning Div.
Precipitation	Mean Precipitation Maps	Ventura County Public Works Agency
Flood Plains	<u>Flood Plain Information,</u> 1969 to 1982 (various volumes)	U.S. Army Corps of Engineers
Soils	U.S. Dept. of Agriculture (USDA) <u>Soil Survey of Ventura County</u> (1970)	USDA Soil Conser- vation Service
Ground Water	Map of Major Ground Water Basins in Ventura County	Ventura County Public Works Agency
Waterbearing Geologic Characteristics	Geologic Cross Section	Ventura County Public Works Agency
Liquefaction	Liquefaction and Potential High Ground Water Levels Map	Ventura County Public Works Agency
	<u>Liquefaction Map of Ventura County, 1975</u>	California Division of Mines and Geology
Sand & Gravel Areas	<u>Ventura County Designated Mineral Resource of Statewide and Regional Significance,</u> Dec. 1981	California Division of Mines and Geology

TABLE XIV-2 (Cont'd.)
SOURCES OF INFORMATION

Faults	<u>Geoseismic Map of Southern California, 1974/1975</u>	California Division of Mines and Geology
	Seismic and Safety Element Hazards Plate IV (1974)	Ventura County General Plan,
Parks	Recreation Element (1974)	Ventura County General Plan
Spheres of Influence	Spheres of Influence Map (1982)	Ventura County Local Agency Formation Commission (LAFCO)
Massive Landslide Areas	<u>Reconnaissance Photo-Interpretation Map of Major Landslides, Southern Ventura County, June 1972</u>	California Division of Mines & Geology (1972)
Fire Stations	Fire Stations Map (1982)	Ventura County Fire District
Aquifer Recharge Areas	Water Resources Map (1969)	Ventura County Public Works Agency

Source: Ventura County Planning Division 1983

14.2 SUMMARY OF SITE SELECTION PROCESS

The major objective of the site evaluation process was to identify suitable locations for a municipal waste landfill in the western portion of the County. The goal is to identify the environmentally superior locations within the western watershed. One site will be developed as a municipal waste landfill to replace the Coastal-Bailard sites once they are closed (Chapter IV, Figure 1). The process used is summarized below:

A. Initial Assessment (Figure XIV-1A)

During this part of the process, 38 potential sites were identified from information provided in the 1976 CoSWMP, from site proponents, and from committee members. All sites were assessed based on the first project constraint, site location. As a result, nine (9) sites which were located outside the western watershed area were excluded from further consideration. The costs of hauling to such distant sites were deemed prohibitive. The remaining 29 sites, all located in the western watershed, were assessed as to the presence of critical factors (Figure XIV-1). Twenty-three of the twenty-nine sites assessed were found to contain critical on-site factors that would be costly to mitigate, or which would entail unreasonable risk. These were excluded from further consideration (Table XVI-3).

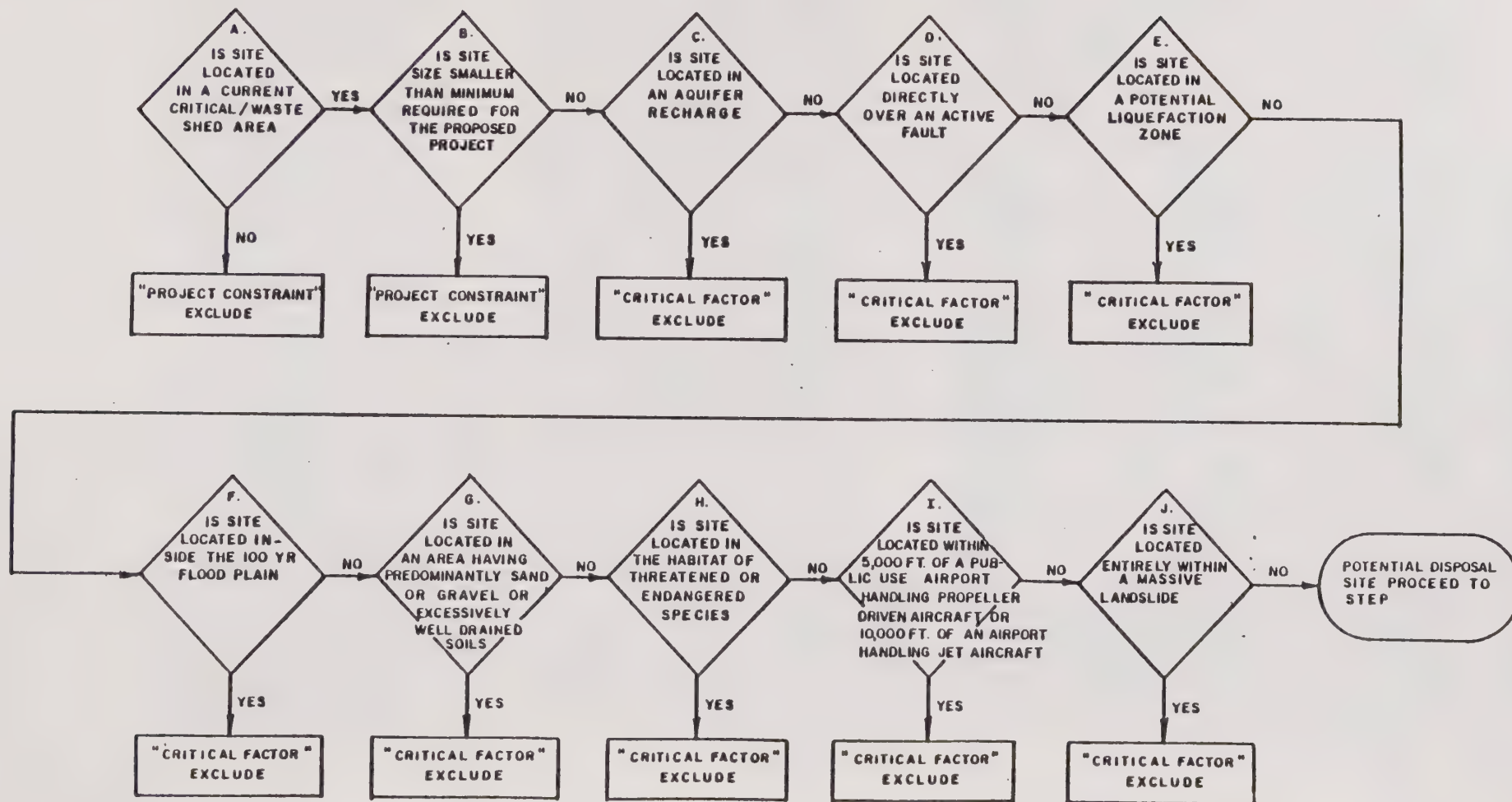
B. Site Rating

The six remaining sites (Aliso Canyon-Willoughby Road, Hall Canyon, Hammond Canyon, Manuel Canyon, School Canyon and Weldon Canyon), were evaluated based on a set of primary and secondary criteria developed by the two committees and staff. These criteria addressed site access and various physical, economic, social and environmental considerations. Primary site evaluation criteria were those which could be evaluated from available documents and maps. Secondary site evaluation criteria were those that could be determined only after a preliminary site visit to the sites. A five point rating system (1=very good to 5=very bad) was used. A specific weighting factor was developed by the committees for each criteria. Sites with the lower number of points indicated less need for mitigation and were thus judged more favorably than those with higher scores. Both committees participated actively in assigning ratings and in evaluating and weighting each factor.

C. Site Selection for Draft CoSWMP

The three sites with the lowest composite scores (Weldon Canyon, Aliso Canyon-Willoughby Road, and School Canyon), were advanced to the final site selection. Each was assessed in more detail by a technical consultant hired by the County to evaluate site specific geologic and hydrological characteristics. During this step, the consultant reviewed County data, conducted additional on-site reconnaissance visits and performed a preliminary site characterization study. At the two largest sites, monitoring wells were installed to determine ground water quality, depth and direction of flow. Surface water samples were collected and analyzed and soil samples were taken and used to determine soil permeability.

FIGURE XIV-17
INITIAL ASSESSMENT (STEP 1)
CRITICAL FACTORS ANALYSIS GUIDE



Committee and staff review of the consultant research led to the identification of both the Weldon Canyon and the Aliso Canyon-Willoughby Road sites as alternative tentative locations for a municipal waste landfill. The School Canyon (Canada de San Joaquin) site was excluded from further consideration since it was believed (incorrectly as was learned later) that it could not provide the minimum usable land area and capacity required for disposal of municipal waste for 20 years.

The draft CoSWMP, released for public review, recommended Weldon Canyon and Aliso Canyon as the alternate tentative landfill sites. During the public review, some criticism was made of each site. Other sites were proposed for inclusion in the CoSWMP during the public review period.

D. Solid Waste Task Force Recommendation

On November 1, 1983, the Board of Supervisors directed staff to re-study the site selection. A Task Force consisting of eight elected officials was created to review possible inclusion of additional sites. The Task Force concurred with the staff assessment that the site selection methodology was sound, and that no sites with critical factors should be considered for inclusion. Two additional sites were recommended for inclusion: School (Canada de San Joaquin) and Hammond Canyons. School Canyon was included because the usable site was determined to be larger than realized. Hammond Canyon was included, because the property owner's opposition was deemed insufficient grounds for rejection of an otherwise viable site.

E. Final Draft Plan Policy Direction

On September 4, 1984, the Board of Supervisors directed that School and Hammond Canyons be included as tentative landfill sites. Based upon an expressed concern over potential adverse impacts on agricultural and municipal water sources, voiced during public testimony, the Board removed Aliso Canyon as a tentative site. The Board also directed that criteria be included in the CoSWMP to allow for consideration of additional sites in the future.

On October 30, 1984, the Board of Supervisors removed School Canyon as a tentative site, following concerns expressed by the City of Ventura over inadequate access and potential adverse impacts on the city's citizens. Provisions were also made by the Board for reconsideration and inclusion of Santa Clara River landfill sites via Plan amendments, within 18 months of the State's approval of the Plan. The Plan was then released for city action. If the majority of the cities representing the majority of the incorporated population approve the Plan, the Board can act on County adoption and submittal of the Plan for State approval.

The entire CoSWMP process that led to selection of tentative landfills, is described in detail below.

14.3 DETAILED DESCRIPTION OF DISPOSAL SITE EVALUATION PROCESS

A. STAFF SELECTION CRITERIA

Five major areas of concern relative to evaluating and rating potential disposal sites were identified through the CoSWMP process. The resulting site evaluation criteria encompassed the following:

1. Physical Features (geology, hydrology, seismology)

Physical features, such as geologic and hydrologic characteristics, are unique for each site and determine the sites overall suitability for disposal operations. Therefore, evaluation criteria were developed to consider physical conditions at potential disposal sites. Emphasis was given to factors singled out for State regulation. Sites containing such "critical factors" were eliminated, due to added cost of mitigation, potential for controversy during the permit stage, and adverse impacts should mitigation measures fail.

2. Health and Safety

Primary consideration must be given to the health, safety and well-being of persons living near the site as well as workers at the site. In this regard, criteria were developed to evaluate the availability of fire protection services and the potential for contamination of nearby surface water supplies.

3. Environmental Characteristics

Environmental characteristics of a specific location are unique to that location and must be considered as potentially non-renewable resources when disrupted. However some locations may be more environmentally sensitive than others. Therefore, criteria were developed to evaluate endangered and threatened species and environmentally sensitive habitats. In this regard, some areas should be maintained in a natural or less impacted state (References XIV-2 and XIV-33).

4. Accessibility

Disposal sites must be readily accessible to be economical and to encourage use by customers. In addition, homes and other uses along access routes must be afforded some protection against adverse impacts. Therefore, criteria were developed to evaluate site accessibility.

5. Socio-Economic

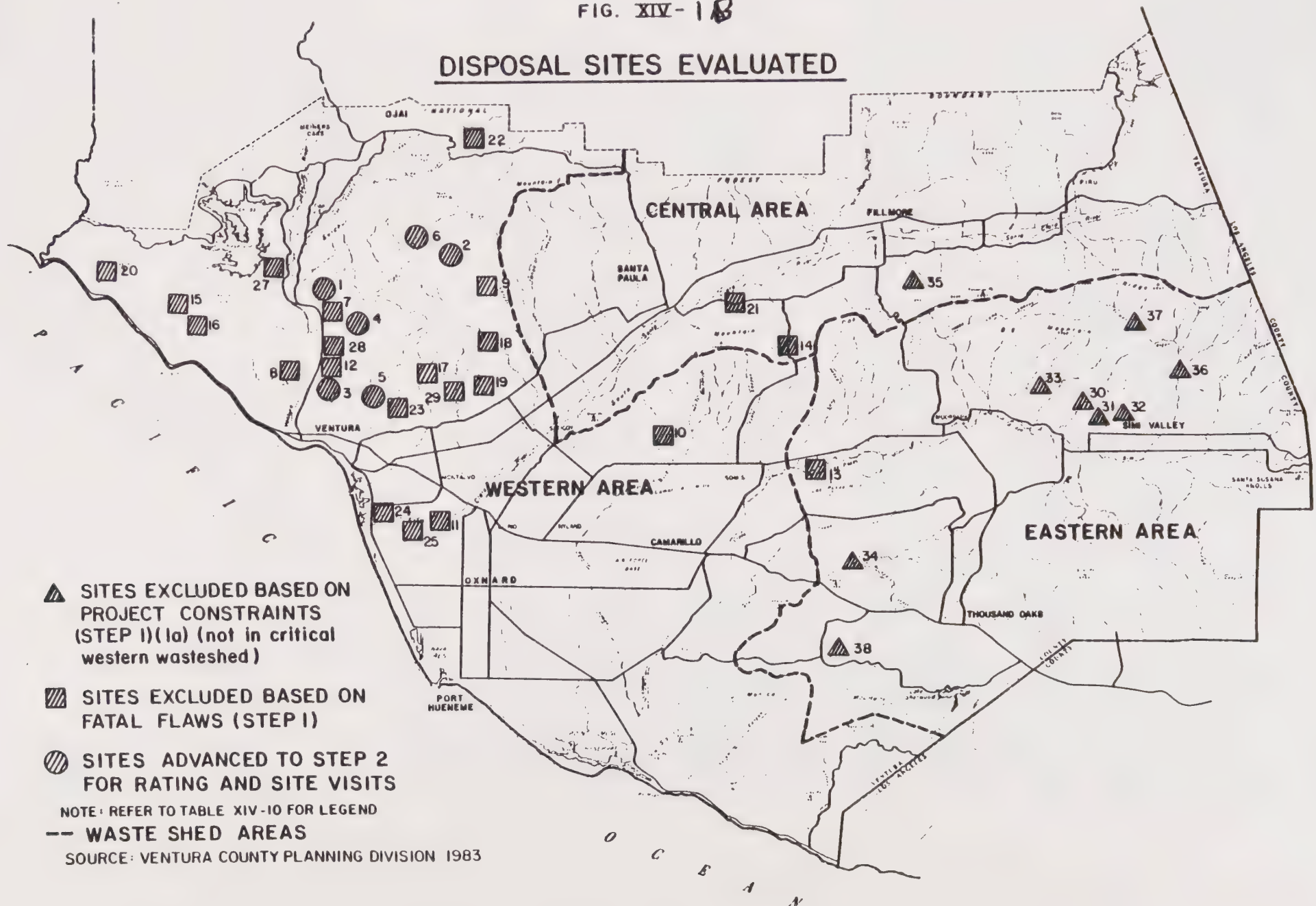
Although not required under the California Environmental Quality Act (CEQA), socio-economic criteria were developed, which considered zoning, land use, visibility of sites and distance from established residential developments.

B. INITIAL SITE ASSESSMENT (Step 1)

This part of the disposal site evaluation process was based on Environmental Protection Agency criteria for classification of solid waste disposal facilities (40CFR 257) (Reference XIV-2) and California State Water Resources Control Board waste discharge requirements for non-sewerable waste disposal to land (Reference XIV-3). Sites evaluated for this CoSWMP update were identified from one of the following sources: the 1976 CoSWMP, project/site proponents, or during committee review. All sites were initially evaluated for existence of both project constraints and critical factors (Figure XIV-1B). The two project constraints were site location and site size. Any tentative site must be located in the western watershed, because the cost of a long haul to a distant landfill outside the watershed would be prohibitive. In addition,

FIG. XIV-1B

DISPOSAL SITES EVALUATED



minimum site size requirements must be met prior to a site being considered further in the process, due to economics of scale.

Critical on-site factors, which have a high potential for causing adverse health and environmental impacts were also considered. Certain on-site geologic conditions were considered potentially costly, controversial, and dangerous (if mitigation failed). These critical factors were felt to be detrimental to establishment of disposal site operations. Therefore, only sites that lacked both project constraints and critical factors were advanced to the final site selection (Step 3). In effect, only the most naturally suited, environmental safe, sites were selected for further evaluation.

The following project constraints and critical factors were used to evaluate these potential disposal sites:

1. Project Constraints Analysis

After the thirty-eight (38) sites were evaluated, nine (9) were deleted because they were not located in the western portion of the County. Potential sites in the Eastern and Central Wasteshed areas will be re-evaluated in future CoSWMP updates, as the need arises. After the project constraints analysis, twenty-nine (29) sites remained and were advanced in the evaluation process.

2. Critical Factors Analysis

The twenty-nine (29) sites within the western wasteshed were analyzed for critical factors as specified herein. Twenty-two of these sites were found to have critical factors; and one was found to be on developed land. Therefore, 23 sites were excluded from further consideration. The six remaining sites were advanced to Step 2, for detailed evaluation and rating.

Of the sites found to contain critical factors, 16 sites possessed more than one critical factor. Out of the six deleted sites with only one critical factor, five were located over aquifer recharge zones, and one was located within a massive landslide area (Table XIV-3).

The following critical factors were used to evaluate the 29 sites within the western wasteshed area. (Refer to Chapter III for detailed information and maps in relation to physical features).

TABLE XIV-3
Critical Factors Analysis Summary
(Sites in Western Wasteshed)

Site	CRITICAL FACTORS								Status	Reference
	In Aquifer Recharge (1c)	Directly Over Active Fault (1d)	Potential Liquefaction Zone (1e)	100 Year Floodplain (1f)	Sand or Gravel (1g)	of Endangered Species (1h)	Distance From Airports (1i)	Within a Massive Landslide (1j)		
Aliso-Canyon-Willoughby Road	--	--	--	--	--	--	--	--	Advanced	Owner
Weldon Canyon	--	--	--	--	--	--	--	--	Advanced	XIV-41&44
School Canyon	--	--	--	--	--	--	--	--	Advanced	XIV-42
Manuel Canyon	--	--	--	--	--	--	--	--	Advanced	XIV-45
Hall Canyon	--	--	--	--	--	--	--	--	Advanced	XIV-42
Hammond Canyon	--	--	--	--	--	--	--	--	Advanced	XIV-43
Canada Larga	Recharge	--	--	Floodplain	--	--	--	--	Excluded	XIV-43
Shell Oil Field	--	Fault	--	Floodplain	--	--	--	Landslide	Excluded	SCAG
Aliso Canyon (lower portion)	Recharge	--	--	--	--	--	--	--	Excluded	Proponent
Seaton Ranch	Recharge	--	--	--	Sand/gravel	--	--	--	Excluded	XIV-41
Leonard	Recharge	--	--	Floodplain	Sand/gravel	--	--	--	Excluded	XIV-45
Dakota Drive	(Site is located on developed land)								Excluded	XIV-45
Arroyo Las Posas	Recharge	--	--	Floodplain	--	--	--	Landslide	Excluded	XIV-45
Balcon Canyon	Recharge	Fault	--	--	--	--	--	--	Excluded	XIV-46
Javon Canyon	--	Fault	--	--	--	--	--	Landslide	Excluded	XIV-46
Padre Juan Canyon	--	Fault	--	--	--	--	--	Landslide	Excluded	XIV-46
Lake Canyon	Recharge	--	--	--	--	--	--	--	Excluded	XIV-42
Pepper Tree Canyon	Recharge	--	--	--	--	--	--	--	Excluded	XIV-42
Long Canyon	Recharge	--	--	--	Sand/gravel	--	--	--	Excluded	XIV-45
Rincon Mountain	--	Fault	--	--	--	--	--	Landslide	Excluded	XIV-46
South Mountain Rd.	Recharge	Fault	Liquefaction	Floodplain	Sand/gravel	--	--	--	Excluded	XIV-45
Reeves Road	Recharge	Fault	Liquefaction	Floodplain	--	--	--	--	Excluded	XIV-45
Barlow Canyon	Recharge	--	--	--	Sand/gravel	--	--	--	Excluded	XIV-45
Santa Clara River (north)	Recharge	--	Liquefaction	Floodplain	Sand/gravel	--	--	--	Excluded	XIV-45
Santa Clara River (south)	Recharge	--	Liquefaction	--	Sand/gravel	--	--	--	Excluded	XIV-45
Maxwell	Recharge	--	Liquefaction	Floodplain	Sand/gravel	--	--	--	Excluded	XIV-45
Casitas	Recharge	--	--	--	--	--	--	--	Excluded	XIV-46
Hartman Ranch	--	--	--	--	--	--	--	Landslide	Excluded	XIV-45
Walker Ranch	Recharge	--	--	--	--	--	--	--	Excluded	XIV-45

Legend

-- = Site meets project constraints and/or does not have specified critical factor.
*ND = No data available.

Source: Ventura County Planning Division 1983

a. Aquifer Recharge Zones

Disposal sites located directly in aquifer recharge zones were excluded from further consideration. Disposal operations, if established in these zones, would have a high potential for contaminating or impairing water resources if the necessary mitigation failed. (Reference XIV-2). Seventeen (17) sites are located in aquifer recharge zones. The required mitigation at a minimum involves a clay liner underlying the landfill. Costs for such mitigation are high.

b. Active Faults

SWRCB regulations require that the presence of known holocene faults be used as a measure of seismic risk. These faults could disrupt containment structures at waste disposal sites and have a potential for causing displacement and ground rupture during the active life and post closure periods. Therefore, new sites are not to be located on known holocene faults (California Administrative Code, Title 23, Section 2533). As required by the State Water Resources Control Board, disposal sites are not permitted directly on active faults, which have been positively identified, and which have been active during historic or holocene time, as defined in California Administrative Code, Title 23 and the Alquist-Priolo Special Studies Zone Act. In Ventura County, the presence of any active fault was deemed a matter of concern. Seven (7) sites evaluated were located directly on active faults and were excluded from further consideration (Table XIV-3). All seven also contained one or more other critical factors.

c. Potential Liquefaction Zones

Disposal sites proposed to be located within potential liquefaction zones (locations having high water tables and coarse grained soils) were excluded from further consideration (Reference XIV-5) (Chapter III, Figure 10). These sites are subject to conditions that can cause instability within subsurface strata. These areas may not provide suitable long-term protection for major underlying ground water basins and surface water systems (Reference XIV-34). State regulations require landfill facilities within such areas be designed to withstand any failure. Five (5) sites evaluated were found to be located entirely within potential liquefaction zones. All such sites contained one or more other critical factors as well.

d. Flood Plain

SWRCB regulations establishes flood protection criteria, based on the 100 year flood plain. (California Administrative Code, Title 23, Section 2530e). Federal regulations require that disposal sites be located outside the 100-year flood plain (Reference XIV-2). Sites located within the 100-year flood plain are subjected to heavy flooding which can cause erosion and movement of waste, potentially causing health and environmental problems. Sites within 100 year flood plains must be fully protected, generally at considerable cost. Eight (8) sites evaluated were found to be located within the 100-year flood plain and were excluded from further consideration (Reference XIV-8) (Chapter III, Figure 5) (Table XIV-3). All contained one or more other critical factors as well.

e. Areas Having Predominantly Sand, Gravel, or Excessively Well- Drained Soils

Sites located in areas having predominantly sand, gravel or excessively well-drained soils do not have adequate permeability characteristics and therefore, will not provide adequate protection to surface or ground water systems (References XIV-1-3). In addition, these soils may not provide adequate daily cover (Reference XIV-12). Eight (8) sites located in areas having predominantly sand, gravel or excessively well-drained soils were excluded from further consideration (Table XIV-3). Information used to determine soil type and classification, was obtained from the USDA Soil Conservation Service Soil Survey of the Ventura Area of California. Additional information concerning soil texture, class and general soil composition was obtained from an EPA document on Evaluation of Cover Systems for solid waste sites (Reference XIV-12).

f. Threatened or Endangered Species Habitat

Disposal sites proposed to be located in the Sespe Condor Sanctuary, Point Mugu State Park, Mugu Lagoon, Channel Islands National Park, or the Santa Monica Mountains National Recreation area, which are areas known to be the habitats of threatened or endangered species were excluded from further consideration. Operation of waste disposal facilities would be incompatible with these areas (Reference XIV-2). Other areas containing endangered and threatened species are to be considered on a case by case basis and evaluated under site rating (Step 2). Considering the twenty-nine (29) sites evaluated, none were found to be located within the habitats of threatened or endangered species.

g. Proximity to Airports

Federal regulations (40CFR 257, FAA Order 5200.5) require that disposal facilities handling putrescible wastes (which are included in municipal solid wastes) be located at least 5,000 feet from public use airports that accommodate propeller driven aircraft or 10,000 feet from airports that accommodate jet aircraft. Adherence to these minimum distances are required to prevent collisions with birds scavenging at landfills. Reports have been submitted to the Federal Aeronautics Administration concerning civilian airplanes colliding with birds scavenging at landfills and are provided in Reference XIV-7. None of the twenty-nine (29) sites assessed were found to be located near airports.

h. Massive Landslide

The SWRCB has established "rapid geologic change criteria" based on the presence of landslides or other changes which occur rapidly. These regulations indicate that these changes are of concern when they threaten the integrity of site containment, drainage, and monitoring facilities (California Administrative Code, Title 23, Section 2530e (4)). In addition, sites with disposal areas located entirely within massive landslides, where an extremely high potential exists for soil slippage to occur, do not guarantee adequate all-weather service and are not desirable locations for disposal site operations. Massive landslides can expose buried materials and block roads. Six (6) sites

evaluated were found to be located within massive landslides and were excluded from further consideration (References XIV-13 and XIV-34). However, this criterion does not exclude sites located in areas with scattered landslides, where adequate land area, cover material and all weather access can be provided.

In order to avoid future problems from poor accessibility and to maintain reasonable hauling distances, only potential sites located in the western portion of Ventura County were considered for this CoSWMP update. The initial screening portion of the site evaluation process was conducted by utilizing available data and maps to identify specific characteristics of potential sites based on the criteria identified in the critical factors analysis guide Figure XIV-1. Table XIV-3 provides a summary of the critical factors analysis and identifies specific critical factors for the sites evaluated. This initial assessment process (Step 1) was designed to screen out undesirable sites. A critical factor analysis summary is provided in Table XIV-3. As a result of the initial screening process, six (6) sites (Aliso Canyon-Willoughby Road, Hall Canyon, Manuel Canyon, School Canyon (Canada de San Joaquin), Hammond Canyon and Weldon Canyon) were advanced to Step 2 for rating.

C. SITE RATING (Step 2)

The second step of the site evaluation process provided for further analysis and rating of the six remaining sites. Preliminary ratings were applied by using available documents and maps. Secondary ratings were assigned based on site visits. Since the owner of the Hammond Canyon site refused to allow County staff to visit the site, the Hammond Canyon site received an incomplete rating. County staff were, however, able to visit the remaining five sites. The site visits also allowed for a better determination of the availability of usable land areas and the possible presence of critical factors that could not be discerned from maps.

1. Primary Disposal Site Rating Criteria

Primary site rating criteria were applied by staff using available information (existing siting studies, environmental impact reports, and maps) (Table XIV-4). Comparable information was available for all sites rated. The Committee determined the ratings and weightings assigned to each factor. The following is a detailed description of the primary disposal site rating criteria used to evaluate the six sites. Information sources used in the development of that criteria are listed in Table XIV-1.

TABLE XIV-4
 *PRIMARY SITE RATING Criteria
 (Applied Using Available Documents and Maps)

RATING SCALE NEED FOR MITIGATION	0	1	2	3	4	5	POINT RATING (PR)	WEIGHTING FACTOR (WF)	RAW SCORE (PRxWF)
	EXTREMELY LOW	VERY LOW	LOW	MODERATE	HIGH	VERY HIGH			
Annual Precipitation	12 in. or less	12-15 in.	15-19 in.	20-24 in.	25-29 in.	More than 29 in.		10	
Availability of Cover Material	All cover material re- quired is avail- able at site	Within 1 mi.	Within 2 mi.	Within 3 mi.	Within 4 mi.	5 or more miles away		10	
Availability of Fire Protection Services	1 mile or less	1-2 miles	2-3 miles	3-4 miles	4-5 miles	More than 5 miles		3	
Availability of Land*	Land is either publicly owned or owner has been contacted and has agreed to sell, lease or use land for a disposal site.	-----	-----	-----	-----	Condemnation may be required. Owner has refused entry for site visit and does not want land used for disposal site. Site is therefore excluded from further consideration.		10	
Consistency with appropriate County General Plan, City Plan or Area Plan	Consistent (+)	-----	-----	-----	-----	Inconsistent (-)		(-) (+)	
Groundwater Quality for the Basin	Saline Ground- water or TDS greater than 10,000 mg/l	Groundwater has TDS 5,000-10,000 mg/l	Groundwater TDS is 3,000-5,000 mg/l	Groundwater TDS is 2,000-3,000 mg/l	Groundwater TDS is 1,000-2,000 mg/l	Groundwater TDS less than 1,000 mg/l		10	
Predominant Soil Type	Clay	Clay/Loam	Loam	Loam/Silt	Silt	Other		10	

TABLE XIV-4 (Cont.)
 PRIMARY SITE RATING Criteria
 (Applied Using Available Documents and Maps)

RATING SCALE NEED FOR MITIGATION	0 EXTREMELY LOW	1 VERY LOW	2 LOW	3 MODERATE	4 HIGH	5 VERY HIGH	POINT RATING (PR)	WEIGHTING FACTOR (WF)	RAW SCORE (PR×WF)
Hauling Distance to Site from Transfer Facility	Less than 9 miles	8-9 miles	9-10 miles	10-11 miles	11-12 miles	More than 12 miles		5	
Freeway Usage (expressed as a percentage of Total Hauling Distance)	80 to 100%	60 to 80%	40 to 60%	20 to 40%	10 to 20%	Less than 10%		3	
Proximity to City Limits (nearest City)	5 miles or more outside City Limits	4-5 miles	3-4 miles	2-3 miles	1-2 miles	Less than 1 mile or within City Limits		5	
Proximity to Spheres of Influence	Outside Sphere of Influence	-----	-----	-----	-----	Within Sphere of Influence		5	
Proximity to Active Faults	More than 1,500	1,000-1,500 feet	500-1,000 feet	250-500 ft. feet	50-250 ft.	Less than 50 ft.		10	
Proximity to Established Residential Developments	Established Residential developments are more than 5 miles from site	Established Residential developments are 4-5 miles from site	Established Residential developments are 3-4 miles from site	Established Residential developments are 2-3 miles from site	Established Residential developments are 1-2 miles from site	Established developments are less than 1 mile from site		7	
Proximity to Officially Designated City, State, County and Federal Parks	More than 5 miles	4-5 miles	3-4 miles	2-3 miles	1-2 miles	Less than 1 mile		5	
Land Use (On Site)	Open Space	Agricultural	Rural	Institutional	Urban	Urban Reserve		7	

TABLE XIV-4 (Cont.)
 PRIMARY SITE RATING Criteria
 (Applied Using Available Documents and Maps)

RATING SCALE NEED FOR MITIGATION	0 EXTREMELY LOW	1 VERY LOW	2 LOW	3 MODERATE	4 HIGH	5 VERY HIGH	POINT RATING (PR)	WEIGHTING FACTOR (WF)	RAW SCORE (PRxWF)
Land Use (Adjacent to the Site)	Open Space	Agricultural	Rural	Institutional	Urban	Urban Reserve		5	
Zoning (On Site)	Open Space (O-S)	Rural Ag. (R-A)	Ag. Exclusive (A-E)	Rural Exclusive (R-E)	Industrial	Other		5	
Zoning (Adjacent to the Site)	Open Space (O-S)	Rural Ag. (R-A)	Ag. Exclusive (A-E)	Rural Exclusive (R-E)	Industrial	Other		5	
Site Terrain	Steep Canyons	-----	Rolling Hills	-----	-----	Flat Land		5	
Primary Site Rating Score									

*This criteria is to be applied using available documents and maps.

PR = Point Rating: The Point Rating is a number from 0 to 5, and is assessed for each criteria element.

WF = Weighting Factor: Weighting factors were agreed upon by CoSWMP Review Committees and County Staff for use in the Ventura County Solid Waste Management Plan (CoSWMP) Site Rating Process.

RS = Raw Score: The raw score equals the Point Rating multiplied by the weighting factor (PR x WF).

Note: This criteria is based on a similar rating system successfully used by San Bernardino County and Fresno County and has been modified for use as part of Ventura County's Solid Waste Management Plan Site Evaluation Process.

Source: Ventura County Planning Division, 1983.

- a. Annual Precipitation - Even in semi-arid areas such as Ventura County, rain can inundate a disposal site (especially one not having adequate cover) creating leachate which must be collected and treated at the site. Torrential downpours can also occur causing soil erosion which can expose wastes. According to the California State Water Resources Control Board (References XIV-1-3), areas with mean annual precipitation levels less than 30 inches are more desirable locations for waste disposal sites since less leachate is likely to be produced. In the south half of Ventura County mean annual precipitation levels range from 12-30 inches. Therefore, criteria were developed to evaluate potential disposal sites in relation to precipitation levels. Information on mean precipitation levels is provided in Chapter III, (Figure 2) and was used by Ventura County Public Works Agency staff to establish criteria limits (Reference XIV-8). Criteria relative to annual precipitation is based on mean average precipitation levels for the south half of Ventura County. Sites located in areas having mean average precipitation levels between 12 and 15 inches are highly desirable.
- b. Availability of Fire Protection Services - Persons operating disposal sites located in remote areas, on occasion, may require evacuation and protection from brush fires. Equipment such as tractors and water pump trucks should be at the site in order to fight a fire. However, the primary line of defense against such fires is a short response time for local fire departments to reach the site. The proximity of the proposed disposal site to the nearest fire station has been taken into account. Proposed sites within five miles of fire stations minimize response time and are desirable locations (Reference XIV-14). The six sites evaluated ranged from 0.4 miles to 11.1 miles from the nearest fire station.
- c. Availability of Cover Material - An adequate supply of cover material having sufficient impermeability to minimize downward percolation of water must be readily available to the site operator in order to meet minimum daily cover requirements (California Administrative Code, Title 23, Section 25544) (References XIV-1-3). If adequate cover material is not available at the site, the cost and feasibility of transporting it to the site must be considered. Therefore, criteria were developed to consider the proximity of needed cover material to potential disposal sites. Ideally, all needed cover material should be located at the site or near enough (i.e. within 1-5 miles) to be transported there in a cost effective manner (Reference XIV-12).

Information concerning the location of soils having adequate landfill cover characteristics was obtained from the United States Department of Agriculture (USDA) Soil Conservation Service Soil Survey Map for the Ventura Area, and was used to evaluate this criterion, along with information indicating suitable cover material characteristics published by the Environmental Protection Agency and the California Waste Management Board, Sections 17682 of the California Administrative Code, Title 14 (Reference XIV-12). Considering the six sites evaluated, all but one, the School Canyon site, had sufficient cover material at the site.

- d. Availability of Land - Disposal sites, if established on land currently in the public domain, usually have minimal acquisition problems

compared to those that are to be established on privately owned land. The criteria developed to evaluate availability of land for disposal operations takes these basic considerations into account. Since permission of land owners is essential to conducting on-site visits and establishing site operations, owners of all six sites were identified and contacted concerning both permission to enter their property in order to conduct a site visit and to determine availability (sale or lease) of their land for disposal site operations.

As indicated earlier, out of the six land owners contacted, only one refused entry (Hammond Canyon owner). Therefore, the Hammond Canyon site was given an incomplete rating and excluded from further consideration at this point in the analysis.

- e. Plan Consistency - Disposal sites are to be consistent with the land use designations in the area they are operating (Reference XIV-4). Sites not consistent with applicable plans may create land use conflicts and would require amendments be made to these plans in order to accommodate disposal operations. Therefore, sites that are consistent with area, city, or the County's General Plan are more desirable. Although some of the sites evaluated were identified in past city and County Solid Waste Management plans, none of the sites evaluated were identified in current plans. Therefore, plan amendments will be needed to provide consistency.
- f. Ground Water Quality for the Major Basin - The quality of ground water in a specific major ground water basin determines its suitability for domestic, agricultural, and industrial use and is usually measured by the amount (milligrams) of total dissolved solids (TDS) contained in a liter of water (References XIV-29 and XIV-30). Major ground water basins meeting primary and secondary drinking water standards (Reference XIV-9) must be provided the highest degree of protection. Disposal sites, therefore, should not be established overlying these areas. Currently, groundwater used for irrigation purposes and watering livestock must also be afforded some degree of protection. Therefore, the SWRCB requires that the quality of groundwater be taken into consideration when evaluating disposal sites (California Administrative Code, Title 23, Section 2533) (Reference XIV-1). Sites not overlying major groundwater basins and sites located over major groundwater basins where groundwater quality is naturally poor, are desirable locations. However, if sites must be located over major groundwater basins or in areas containing perennial groundwater systems, suitable protection must be provided (i.e., clay barriers or other means of protection). Information relative to the location of major groundwater basins and groundwater quality is provided in Chapter III, Table 1. This information was used with other water resources information provided by the County's Public Works Agency to identify major ground water basins and water quality parameters (References XIV-9, XIV-29 and XIV-30). In applying this criterion, intermittent or perched groundwater was not considered as a groundwater basin or major source of groundwater. None of the six sites evaluated were found to be overlying a major groundwater basin.

- g. Predominant Soil Type - Predominant soil types were identified using the Soil Survey Map of Ventura Area, California 1970. This survey is published by the U.S. Department of Agriculture, Soil Conservation Service (SCS). A general soil map indicating the major soil types in Ventura County is provided in Chapter III, Figure 6. Clay is a good repository for waste because it provides suitable protection from infiltration. Therefore, sites located in areas having a predominance of clay are considered most desirable. Sites located in areas having a predominance of loam or silt can provide moderate protection and are also considered desirable locations. Sites located in areas having a predominance of sand, gravel or excessively well-drained soils provide little or no desirable qualities in this regard and were excluded from further consideration as indicated in the Critical Factors Guide (Figure XIV-1). Soil types at the six sites rated were found to be basically clay loams and shaly loams.
- h. Hauling Distance - The current high cost of fuel and vehicle maintenance dictates that the more distant a site is from the transfer station the higher the total fees disposal customers will have to pay (Reference XIV-18). Sites outside the watershed were deemed so expensive to haul to they were excluded at the onset. The California Waste Management Board indicates that it costs approximately 52 cents per ton per mile to haul refuse in collection vehicles (averaging 8 tons/trip) directly to disposal sites. Local haul costs appear to be higher at an estimated 86 to 88 cents/ton/mile, because loads average 6 tons/load. Transfer vehicles haul large loads (approximately 20 tons per load) though they consume fuel at a high rate (Reference XIV-19). In addition, greater travelling distances increase air pollution. Therefore, in evaluating this criteria, distance between the proposed transfer facility and disposal sites was used as a rating factor. Considering a break even distance of 10-12 miles, the closer the site to the proposed transfer facility break-even point, the more desirable. The six candidate sites evaluated ranged from 5.3 to 16.6 miles from the transfer station.
- i. Freeway Usage -This criterion was developed to consider the percentage of the total hauling distance (miles) from the transfer facility to the site in relation to the amount of miles that the transfer vehicles would travel on freeways. This factor is rated using the criteria provided in Table XIV-4. The greater the percentage of freeway mileage, the more desirable the site, since freeways are designed to handle heavy trucks and allow them to operate more efficiently at higher speeds. Freeway usage for the various sites ranged between 20-, and 79 percent.
- j. City Limits - Many of the cities within the County continue to expand. Land within city limits is at a premium and, for the most part, land use designations within those areas would be incompatible with establishing new disposal facilities. In addition, expansion of city boundaries concomitant with residential development can encroach on a site, resulting in land use conflicts. Therefore, criteria were applied to rate proposed disposal sites based on their proximity to city limits. Sites located within or close to city limits were considered less desirable than those located outside and away from city limits. Only one of the six sites evaluated was adjacent to the city limits of Ventura. The other sites were not located within the limits of any cities.

- k. Spheres of Influence - Evaluation of this criteria relates to the proposed disposal facility's proximity to designated Local Agency Formation Commission (LAFCO) Spheres of Influence boundaries identified in the LAFCO Spheres of Influence Plan. The greater the distance between the sphere of influence and the disposal site, the more likely impacts by cities and developing areas encroaching on the site will be minimized. If possible, it is desirable to locate disposal sites outside of spheres of influence. Three of the six sites: School Canyon, (Canada de San Joaquin), Manuel Canyon and Hall Canyon are located within the Sphere of Influence for the City of Ventura. All other sites rated were not located within a sphere of influence.
- l. Proximity to Faults - Since sites located on active faults are excluded from further consideration during Step 1, only their proximity to active faults was considered during the rating portion of this evaluation. Therefore sites were rated based on their distance from the nearest active fault. Distance to the nearest active fault (Holocene Fault) ranged from 500 feet at Weldon Canyon, to 20,000 feet at Hall Canyon, considering all six candidate sites. Final proposed SWRCB regulations require that new Class II sites not be located closer than 200 feet from a holocene fault. None of the 6 candidate sites are affected by this regulation.
- m. Officially Designated Recreation Areas - (city, county and state parks)
- Parks and recreation areas have been set aside for public enjoyment, and in some cases considerable money has been spent to develop these areas. Therefore, the proximity of proposed disposal sites and their impact on the continued use of these areas has been given consideration in the evaluation criteria. In order to minimize impacts of disposal operations on these areas, owners and operators of disposal sites proposed to be located adjacent to these areas should consider possible impacts and necessary mitigation measures prior to establishing disposal operations. This is consistent with the objectives of the Ventura County General Plan Open Space and Conservation and Recreation Elements (Reference XIV-10). Of the six candidates sites rated, none were located within park boundaries. They ranged from a distance of 0.5 to 4.6 miles from the nearest designated park or recreation area.
- n. Land Use (at site) - The California Waste Management Board (CWMB) Guidelines established for the implementation of new requirements under Assembly Bills (AB) 3302 and 3433, required that disposal facilities be compatible with existing land use at the site. Therefore, sites were rated as to their compatibility with land use designations. Sites in areas with open space, or agricultural land use designations were rated more favorably compared to other land use designations. Land use at the sites rated was found to be either Agricultural or Open Space.
- o. Surrounding Land Use - Compatibility of land uses surrounding the sites were also evaluated and assigned ratings. Again, open space and agricultural land use designations were rated most favorable compared to others. Land uses surrounding the sites were consistent with the land uses at each of the sites.
- p. Zoning (at the site) - The Ventura County Zoning Ordinance provides for waste disposal operations, subject to a Conditional Use Permit, in the Open Space ("O-S") Rural Agricultural ("R-A"), Rural Exclusive ("R-E"), and Agricultural Exclusive ("A-E") zones (Article 5, Section 8105)

(Reference XIV-25). Therefore, sites located in these zones were rated more favorably than sites located in other zones. The California Waste Management Board requires zoning at the site be compatible with disposal site operations (Reference XIV-4). Therefore, if a suitable site is located in a zone that does not permit solid waste disposal facilities, a zone change would be required. Zoning at all six sites rated is Agricultural Exclusive (A-E).

- q. Surrounding Zoning - This criteria considered zoning immediately surrounding the potential disposal site. The California Waste Management Board requires zoning surrounding the site be consistent with disposal site operations (Reference IV-4). Therefore, if a suitable site is located immediately adjacent to an incompatible zone, a zone change would be required. At all but one site, the zoning adjacent to the sites was Agricultural Exclusive. At one site the adjacent zoning was Rural Agruciltural.
- r. Site Terrain - Potential locations were rated on one of three terrain types; flat, gently rolling hills, or steep canyons. Experience in sanitary landfill operations indicates that steep canyons have the greatest disposal capacity (50,000 cubic yards per acre) (References XIV-27 and XIV-28). Flat land requires excessive excavation leaving unnatural earth forms and will only accommodate approximately 10,000 cubic yards per acre (Reference XIV-27). Rolling hills, although more desirable than flat lands, do not have as great a disposal capacity as steep canyons. All sites evaluated were steep canyons. One site evaluated, Manuel Canyon, was a "V" shaped canyon. Table XIV-5 provides the primary site rating criteria evaluation scores from the candidate sites rated. These scores ranged from 182 to 260.

TABLE XIV-5

Primary Disposal Site Rating Scores

	Weldon Canyon Site #1	Aliso Canyon Site #2	School Canyon Site #3	Manuel Canyon Site #4	Hall Canyon Site #5	Hammond Canyon Site #6
Annual Precipitation	30	20	20	20	20	30
Availability of Cover Material	0	0	30	50	0	0
3 Availability of Fire Protection Services	0	15	6	0	12	15
Availability of Land*	0	0	0	0	0	50
Consistency with appro- priate County General Plan, City Plan or Area Plan	(-)	(-)	(-)	(-)	(-)	(-)
Groundwater Quality for the basin	30	40	30	30	30	30
Predominant Soil Type	10	10	20	10	10	10
Hauling Distance from Site to Transfer Facility	15	25	5	10	0	25
Freeway Usage (expressed as a percentage of Total Hauling Distance)	0	9	3	3	15	6
Proximity to City Limits (nearest City)	25	5	25	25	25	15
Proximity to Spheres of Influence	0	0	25	25	25	0
Proximity to Active Faults	30	0	10	0	0	10
Proximity to Established Residential Developments	35	0	35	35	28	14
Proximity to Officially Designated City, State, County and Federal Parks	25	5	20	20	20	15
Land Use (On Site)	0	0	25	7	25	0
Land Use (Adjacent to the Site)	0	0	25	25	25	0
Zoning (On Site)	10	10	10	10	10	10
Zoning (Adjacent to the Site)	10	10	20	25	10	10
Site Terrain	0	0	0	25	0	0
PRIMARY RATINGS SCORES	220	149	309	320	255	240

(-) = Minus no points deducted

Source: Ventura County Planning Division 1983

2. Secondary Disposal Site Rating Criteria

After conducting site visits, secondary disposal site rating criteria were applied. Site visits were conducted at five sites, which included; Aliso Canyon-Willoughby Road, Hall Canyon, Manuel Canyon, School Canyon and Weldon Canyon. Information obtained included site specific data that could not be ascertained from available documents and maps. As already noted, county staff could not obtain permission from the site owner to visit the Hammond Canyon site which therefore was only partially rated (Table XIV-7). The secondary site rating criteria used are provided in Table XIV-6 and are described herein. The Committee determined the weighting assigned each factor. It is helpful to point out that, "site access" criteria (road width, construction, grade, and visibility) were applied separately, to evaluate both off-site access (public roads, which are evaluated from the nearest freeway exit, using the shortest route to the site) and on-site access (private roads, which are to be evaluated from their juncture with the nearest public road).

- a. Access Road Width - The width of access roads both off, and on-site, determine the number of trucks that can enter and leave the site at any one time. In general, access roads with two to four lanes are acceptable. However, the wider the access road, the better (Reference XIV-22 and XIV-23). Any inadequate access road will require improvement. Therefore, the cost for access road improvements, such as the need for paving or construction of bridges or culverts should be considered by the site owner or developer prior to establishing operations.
- b. Access Road Construction - Both off-site and on-site access roads must be durable enough to withstand a high volume of heavy truck traffic. Concrete and asphalt are excellent surfacing materials for sustaining heavy traffic (Reference XIV-22). However, existing access roads should be evaluated by a professional highway design engineer in order to provide specific information on access road modifications (Reference XIV-23). Existing roads should be properly graded and protected against washout and flooding during the rainy season. If a potential disposal site does not have an access road, or has only a portion of completed roadway, the cost of constructing or completing such a road should be considered by the site owner or developer (Reference XIV-23).
- c. Access Road Grade - The grade (steepness) of access roads is important because steep roads are difficult to maneuver in bad weather. Access roads with a five percent grade or more greatly increase wear and tear on vehicles transporting waste to the site, and should be avoided. (References XIV-22 and XIV-23). Sites having access road grades of ± 1 are most desirable. The sites rated had access road grades ranging from ± 2 percent to ± 10 percent. The steepest access road (less than $\frac{1}{2}$ of a mile) was encountered at the entrance of the Weldon Canyon site.

TABLE XIV-6
SECONDARY DISPOSAL SITE RATING CRITERIA*
(Applied After Site Visit)

RATING SCALE NEED FOR MITIGATION	0 EXTREMELY LOW	1 VERY LOW	2 LOW	3 MODERATE	4 HIGH	5 VERY HIGH	POINT RATING (PR)	WEIGHTING FACTOR (WF)	RAW SCORE (PRxWF)
Off site Access (Public Roads)									
Road Width	2 lanes (24 ft. or more)	-----	-----	-----	-----	1 lane (12 ft.)		5	
Road Construction	Concrete	Asphalt	Gravel	Dirt	Combination of various road sur- faces	No access road		5	
Maximum Grade	± 1% grade	± 2% grade	± 3% grade	± 4% grade	± 5% grade	More than 5% grade		5	
Visibility at intersection leading to Site	More than 300 feet	250-300 ft.	200-250 ft.	150-200 ft.	100-150 ft.	Less than 100 ft.		5	
On Site Access (Private Roads)									
Road Width	2 lanes (24 ft.)	-----	-----	-----	-----	1 Lane (12 ft.)		5	
Road Construction	Concrete	Asphalt	Gravel	Dirt	Combination of Various Road Sur- faces or incomplete road	no Access Road		5	
Maximum Grade	± 1%	± 2%	± 3%	± 4%	± 5%	More than 5% grade		5	
Number of Stop Signs and Traffic Lights	1	2	3	4	5	More than 5		5	
Apartment Complexes Along Access Road	0	-----	-----	1	-----	2 or more		7	

TABLE XIV-6 (Cont.)
SECONDARY DISPOSAL SITE RATING CRITERIA*
(Applied After Site Visit)

RATING SCALE NEED FOR MITIGATION	0 EXTREMELY LOW	1 VERY LOW	2 LOW	3 MODERATE	4 HIGH	5 VERY HIGH	*POINT RATING (PR)	WEIGHTING FACTOR (WF)	RAW SCORE (RxWF)
Homes Along Access Road (Avg. No. Per Mile)	0-5	5-10	10-15	15-20	20-25	More than 25		10	
Schools Along Access Route**	0	-----	-----	1	-----	2 or more		7	
Hospitals Along Access Routes**	0	-----	-----	1	-----	2 or more		3	
Proximity to Habitat of Endangered Species and/or Wild Life Preserves	Over 1 mile	3/4-1 mile	1/2-3/4 miles	1/3-1/2 mile	1/4-1/3 mile	Less than 1/4 mile		5	
Sensitive Environmental Habitats	No sensitive habitats at the site	Southern Calif. native grassland at the site	Southern oak woodland at the site	Riparian woodland and associated aquatic re- sources at the site	Wildlife movement corridor at the site	All of the previously mentioned environmentally sensitive habitats at the site		5	
Areas of Archeological Significance	Site does not have areas of archaeolo- gical significance	----	----	Areas of archaeological significance nearby (within 1/2 mile)	----	Site has areas of archeological significance		5	

TABLE XIV-6 (Cont.)
SECONDARY DISPOSAL SITE RATING CRITERIA*
(Applied After Site Visit)

RATING SCALE NEED FOR MITIGATION	0 EXTREMELY LOW	1 VERY LOW	2 LOW	3 MODERATE	4 HIGH	5 VERY HIGH	POINT RATING (PR)	WEIGHTING FACTOR (WF)	RAW SCORE (RxWF)
Surface Water Supply (lake, rivers, reservoirs)	Site not in a drainage area tributary to fresh surface water supply	-----	Site in tributary drainage area but natural physical factors prevent migration to fresh surface water supply	-----	-----	In tributary area to fresh surface water supply.		10	
Visibility of Site	Site is currently screened from view in all directions	Site is currently screened from view in 3 directions	Site is currently screened from view in 2 directions only	Site is screened from view in most critical directions	Site is not screened from view in most criti- cal direction only	Site requires screening in all directions		5	
Proximity to oil production operations	Oil production operations currently being conducted on or adjacent to the site	----	----	----	----	Oil production operations not currently being conducted on or adjacent to the site		5	
Miles of road requiring repair or construction	0-2	2-3	3-4	4-5	5-6	More than 6 miles		7	
Estimated Site Life	More than 35 Years	30-35 years	25-30 years	20-25 years	15-20 years	Less than 15 years		7	
							Secondary Site Rating Score		
							Composite Score		

TABLE XIV-6 (Cont.)
SECONDARY DISPOSAL SITE RATING CRITERIA*
(Applied After Site Visit)

RATING SCALE NEED FOR MITIGATION	0 EXTREMELY LOW	1 VERY LOW	2 LOW	3 MODERATE	4 HIGH	5 VERY HIGH	POINT RATING (PR)	WEIGHTING FACTOR (WF)	RAW SCORE (PRxWF)
--	--------------------	---------------	----------	---------------	-----------	----------------	-------------------------	-----------------------------	----------------------

*This criteria is to be applied after a site visit using information from knowledgeable experts.

**Consider suitable alternative routes to site, or if this is not possible, then site should be eliminated.

PR = Point Rating: The Point Rating is a number from 0 to 5 which is assessed for each criteria element.

WF = Weighting Factor: Weighting Factors were agreed upon by CoSWMP Review Committees and County Staff for use in the Ventura County Solid Waste Management Plan (CoSWMP) Site Rating Process.

RS = Raw Score: The Raw Score is the Point Rating Multiplied by the Weighting Factor (PRxWF).

*Note: This criteria is based on a similar rating system used by San Bernardino County and Fresno County and has been modified for use as part of Ventura County's Solid Waste Management Plan (CoSWMP).

Source: Ventura County Planning Division, 1983.

BP:d

TABLE XIV-7

Secondary Disposal Site Rating Scores

	Weldon Canyon Site #1	Aliso Canyon Site #2	School Canyon Site #3	Manuel Canyon Site #4	Hall Canyon Site #5	Hammond Canyon Site #6
<u>Off Site Access</u>						
Road Width (Public Roads)	0	0	0	0	25	25
Road Construction	5	5	5	5	5	5
Maximum Grade	5	5	5	5	15	5
Visibility at Intersection Leading to Site	0	0	0	0	20	*ND
<u>On Site Access</u>						
Road Width (Private Roads)	25	25	15	25	15	*ND
Road Construction	15	15	5	25	5	*ND
Maximum Grade	25	5	5	25	20	*ND
Stop Signs and Traffic Lights	5	10	10	0	25	0
Apartment Complexes Along Access Road**	0	35	21	0	21	0
Homes Along Access Road**	0	10	30	0	50	0
Schools Along Access Route**	0	35	21	0	35	0
Hospitals Along Access Routes**	0	0	0	0	0	0
Proximity to Habitat of Endangered Species and/or Wild Life Preserves	0	0	0	0	0	0
Sensitive Environmental Habitats	10	10	10	10	0	*ND
Areas of Archaeological Significance	15	0	0	15	0	15
Surface Water Supply (lake, rivers, reservoirs)	0	50	0	0	0	0
Visibility of Site	0	0	0	20	0	0
Proximity to oil production operations	0	0	0	0	0	0
Miles of road requiring repair or construction	7	28	7	14	21	35
Estimated Site Life	21	0	35	35	35	*ND
SECONDARY RATING SCORES	133	233	169	179	292	Incomplete Rating

*ND = No data available
since site visit could
not be conducted

** = Non-freeway access roads only

Source: Ventura County Planning Division 1983

- d. Access Road Visibility - The visibility afforded drivers of disposal vehicles is most critical at the intersection where the site access road meets the first highway intersection upon leaving or entering the disposal site (Reference XIV-23). The degree of visibility at the intersection (distance in feet) was determined upon a visit to the potential site. A visibility distance of 300 or more feet is desirable (Reference XIV-23). If necessary, the cost of providing adequate visibility, such as tree removal or redesign of the access road at the intersection should be considered by the site owner or developer. Only one of the sites rated (Hall Canyon) had an access road off-site that had less than the minimum 300 foot visibility distance. All other sites exceeded the minimum visibility distance at the first intersection of the site access road and the first major highway.
- e. Stop Signs and Traffic Signals - Stop signs and traffic signals along access routes can create bottlenecks and traffic tie-ups and, therefore, were evaluated during site visits. In order to evaluate this criterion, the number of stop signs and traffic lights were counted along the access road using the shortest distance from the nearest freeway exit to the site. Points were assessed based on the total number counted. The number of stop signs and traffic signals at the sites rated ranged from one at the Weldon Canyon site, to 5 for the Hall Canyon site. If additional stop signs or traffic lights are needed, the cost for providing them must be considered prior to establishing disposal site operations.
- f. Apartment Complexes - The impact on people living in apartments directly adjoining the access route must be considered. Therefore, the number of apartment complexes along the access route from the nearest freeway exit to the disposal site was used to compare sites. Sites with access routes that least impact apartment dwellers were considered most desirable. The number of apartment complexes range from zero for four of the sites, to two along the access route to the Aliso Canyon-Willoughby Road site.
- g. Homes Along Access Routes - The impact to people residing in dwellings directly adjoining the access route must be considered. Therefore, the average number of dwellings per mile using the shortest route to the site from the nearest freeway exit was used to compare sites. Sites with access routes impacting on the smallest number of residential dwellings are most desirable. A scale was developed to evaluate this criteria (Table XIV-6) (Reference XIV-18). Suitable mitigation measures can be used to further minimize impacts of truck traffic on nearby residents. The site with the lowest average number of homes per mile along the access route was Weldon Canyon, with an average of less than one per mile. The Hall Canyon site had the highest average number of homes per mile (25) of all the sites rated.
- h. Schools Along Access Route - From the standpoint of safety, disposal sites with access routes (non-freeway) that do not require truck traffic to pass directly by schools are most desirable. The Aliso Canyon-Willoughby Road and Hall Canyon sites were the only sites evaluated which required trucks to pass directly by operating schools.

- i. Hospitals Along Access Routes - Sites that have access routes (non-freeway) that do not require truck traffic to pass directly by hospitals are most desirable. None of the six sites rated had access routes passing hospitals.
- j. Habitat of Endangered Species - In order to comply with EPA guidelines any disposal facility located directly in an endangered species habitat must demonstrate that operations will not affect the endangered species in question (40CFR 257) (Reference XIV-2). If alternative sites are available in areas not directly affecting these species, these sites should be favored (Reference XIV-2). Given the nature of waste disposal operations and possible impacts, criteria has been developed which requires consideration be given to locating disposal sites away from the habitats of threatened or endangered species. Information concerning location and designation of endangered species and the application of this criteria is to be determined as part of the site visit (Reference XIV-33). In addition, modifications to site operations may be required in order to decrease the impact of disposal site operations on nearby endangered and threatened species or their habitat. None of the six sites rated had endangered species located at the site.
- k. Sensitive Habitats - Sensitive habitats are those habitats that are scarce, unusually sensitive to disturbance or important ecologically.

These sensitive habitats include (Reference XIV-36):

- Raptor foraging or nesting sites.
- Wildlife movement corridors
- Southern California native grasslands
- Riparian woodland and associated aquatic resources
- Southern oak woodlands

Criteria were developed to rate sites based on sensitive habitats (i.e., other than the habitats of threatened or endangered species). Criteria developed required that a preliminary review of sensitive habitats be made during the site visit. A point value was assessed potential sites based on specific sensitive habitats located therein as presented in Table XIV-6. Sites not having sensitive habitats are most desirable. Where sensitive habitats are found, suitable mitigation measures should be considered in order to lessen the impact. The sites rated were predominately located in southern oak woodlands or native grassland habitats.

- l. Areas of Archaeological Significance - Potential disposal sites must be surveyed to locate areas of archaeological significance (Reference XIV-38). Mitigation measures may need to be considered and agreed upon by those concerned in order to provide for adequate protection of archaeological resources. The source of information for locating areas of archaeological significance is the Ventura County Archaeological Society. This society was contacted and requested to determine areas

of archaeological significance at the potential disposal sites. None of the sites identified contained archaeological resources. However, two sites, Weldon Canyon and Hammond Canyon have access routes that pass near the Mission Aqueduct on Canada Larga Road.

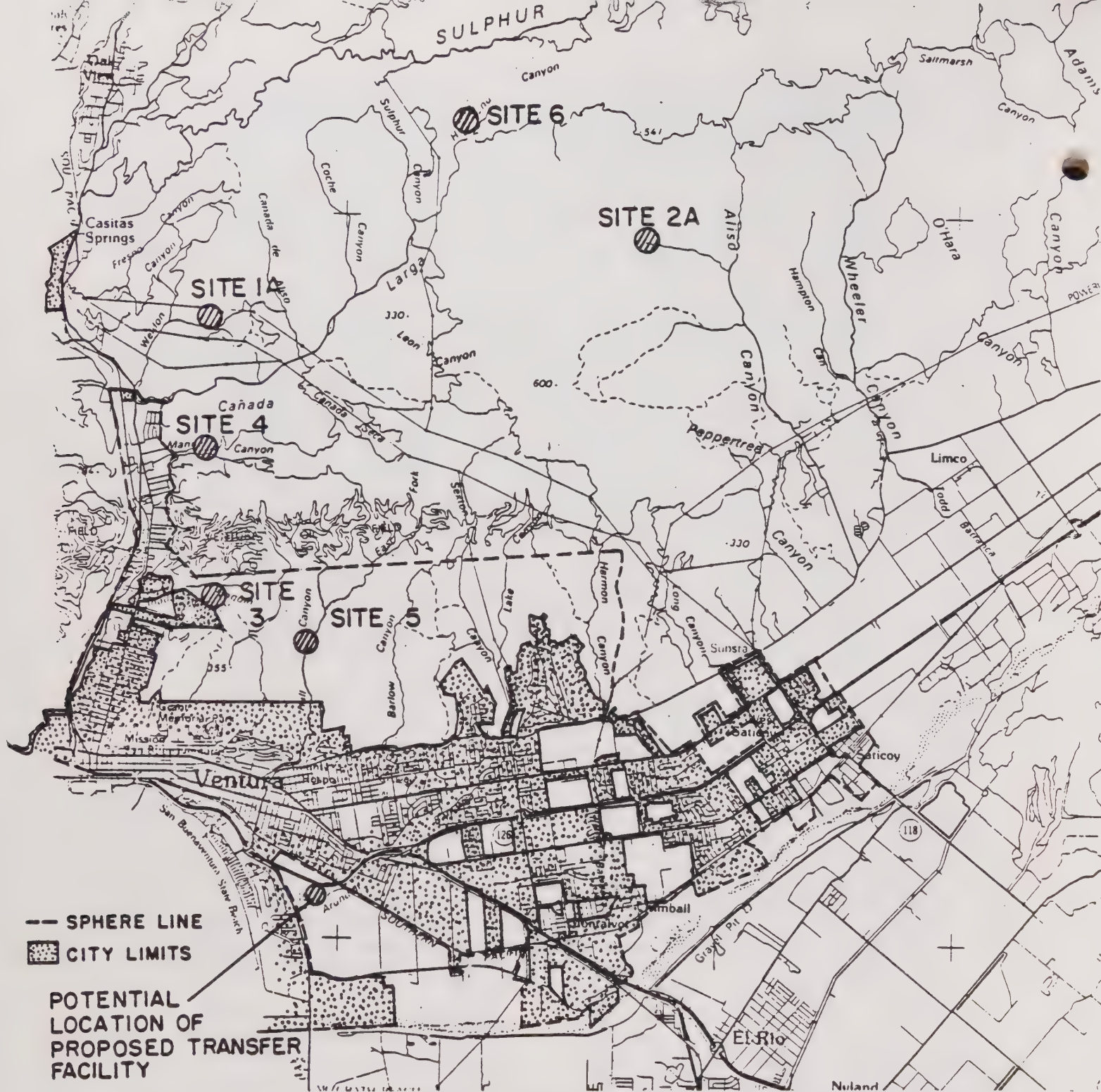
- m. Surface Water (Rivers, Lakes and Streams) Surface waters provide areas for fishing, swimming, recreation, and water for irrigation. Some surface waters designated reservoirs are used to supply communities with drinking water, and some provide water for emergency use. In Ventura County, portions of the Calleguas Creek, Sespe Creek, Piru Creek, the upper portion of the Ventura River and the Santa Clara River are major water resources (Chapter III, Figure 1). Water from portions of these creeks and rivers are used for irrigation and to replenish ground water supplies. Bard Reservoir and Lake Casitas are major surface waters which supply potable water to surrounding communities. Essential surface waters must be provided adequate protection from possible contamination due to disposal site operations. Therefore, the State Water Resources Control Board requires drainage modifications and leachate collection systems to be installed prior to disposal sites becoming operational (References XIV-1 and XIV-3). Sites not tributary to essential fresh surface water supplies obtained the best rating (References XIV-3 and XIV-8). The second best rating was applied to sites in tributary drainage areas where natural physical features prevent migration to fresh surface water supplies (Reference XIV-8). Sites directly tributary to fresh surface water supplies may not be acceptable unless suitable effective mitigation measures can be provided (Reference XIV-7). Five of the sites evaluated are tributary to the lower portion of the Ventura River, which is not a source of usable fresh water. However one site evaluated (Aliso Canyon-Willoughby Road) is tributary to the Santa Clara River which is considered a source of fresh water. Therefore mitigation measures are especially important at this site.
- m. Visibility of Site - Disposal sites that are highly visible to persons in nearby communities and the general public may generate a high degree of concern over continued operations. Sites that are well hidden from view, such as those located in canyons, do not generate the same degree of concern. Most sites that are not naturally screened from view can be screened, using engineering design and landscaping techniques. The methods to be employed to screen sites should be considered prior to site operations. All sites visited are well screened from view.
- n. Proximity to Oil Production - Since it was originally assumed the proposed disposal site would provide for disposal of oil field waste, proximity to oil production operation was considered. All six sites rated are in close proximity to oil production areas. The Board of Supervisors subsequently directed staff to identify potential municipal waste sites which did not need to incorporate oil wastes.
- p. Road Repairs and Construction - One of the major concerns when selecting a disposal site is the need to repair or construct access roads to and on the site. Current costs for road construction can be as low as one million dollars per mile in flat land areas or as costly as two million dollars per mile in steeper areas, or in areas where bridges and other facilities may be required. Although road

construction costs are born by the site owner or developer this cost is transferred to the disposer and is added into the tonnage fee charged for disposal. Therefore, miles of road repair and construction required were estimated for each site and points were assessed accordingly. Sites requiring the least road repair and correction were rated more favorably. The miles of road repair and construction ranged from a minimum of 2 to 3 miles for the Weldon Canyon and School Canyon (Canada de San Joaquin) sites, to a maximum of 6 to 7 miles for the Aliso Canyon-Willoughby Road and Hammond Canyon sites.

- q. Estimated Site Life - Small term disposal sites may only last a few years and are expensive to operate. The larger the site, the longer the site's life, and the higher the potential for recovering expenses. In this report, long term sites (20-35 years) are highly desirable. Since a great deal of information concerning site size, waste generation rates and topography is needed for a full evaluation of site life, only a general estimate based on the project description, waste generation rates and estimated usable land area was developed. Based on site visits, only two sites, Weldon Canyon and Aliso Canyon-Willoughby Road have site life estimates above 20 years. Weldon Canyon has an estimated minimum site life of 35 years with expansion capabilities and the Aliso Canyon-Willoughby Road has a site life estimated at up to 50 or more years. A subsequent examination of aerial photos suggests Hammond Canyon has potentially the largest site life of all of the six sites. Provided in table XIV-6 are the secondary site rating criteria scores for the candidate sites. Scores range from 133 to 292.

3. Composite Scoring and Ranking

After the potential disposal sites were rated and site visits conducted, both the primary and secondary site rating scores were added together for each individual site in order to obtain a composite score. The sites were then ranked in order of their composite scores. Sites with the lowest composite scores were ranked more favorably and were advanced to Step 3 for further study and evaluation by a consultant. Table XIV-9 provides locational characteristics and specific information used to rate candidate disposal sites. Table XIV-8 provides composite scores for all candidate sites rated. Table XIV-10 provides a summary of the CoSWMP disposal site evaluation process and indicates those sites advanced to the final site selection (Step 3). Figure XIV-2 identifies the approximate location of the six potential disposal sites evaluated.



GENERAL LOCATIONS OF THE SIX CANDIDATE SITES EVALUATED

Figure XIV-2



SCALE
 1:100,000

SOURCE:
 VENTURA COUNTY PLANNING DIVISION
 1983

LEGEND

- SITE 1A WELDON CANYON
- SITE 2A ALISO CANYON - WILLOUGHBY ROAD
- SITE 3 SCHOOL CANYON (CANADA D. SAN JOAQUIN)
- SITE 4 MANUEL CANYON
- SITE 5 HALL CANYON
- SITE 6 HAMMOND CANYON

TABLE XIV-8

Composite Disposal Site Ratings

o Weldon Canyon - (Site #1)

Primary Score - 220
Secondary Score - 133
Composite Rating - 353

o Aliso Canyon - (Site #2)

Primary Score - 149
Secondary Score - 233
Composite Rating - 382

o School Canyon¹ - (Site #3)

Primary Score - 309
Secondary Score - 169
Composite Rating - 478

o Manuel Canyon¹ - (Site #4)

Primary Score - 320
Secondary Score - 179
Composite Rating - 499

o Hall Canyon^{1,2} - (Site #5)

Primary Score - 255
Secondary Score - 292
Composite Rating - 547

o Hammond Canyon³ - (Site #6)

Primary Score - 240
Secondary Score - Incomplete
Composite Rating - Incomplete

Note:

- 1 = Sites excluded based on site size.
2 = Sites excluded based on presence of fatal flaw.
3 = On-site visit could not be conducted at the Hammond Canyon site. Therefore only an incomplete rating is provided.

Source: Planning Division 1983

TABLE XIV-9
Locational Characteristics for
The Six Candidate Disposal Sites Evaluated

	Site #1 Weldon Canyon	Site #2 Aliso Canyon/ Willoughby Road	Site #3 School Canyon	Site #4 Manuel Canyon	Site #5 Hall Canyon	Site #6 Hammond Canyon
Nearest City (City Limits)	2.5 miles (Ventura)	4.0 miles (Ojai) 5.2 miles (Ventura)	Adjacent to Ventura City Limits	1.4 miles (Ventura)	1.1 miles (Ventura)	3 miles (Ojai) 8.5 miles (Ventura)
Nearest Major Highway	Rt. 33	Rt. 126	Rt. 33	Rt. 33	Rt. 101	Rt. 33
Nearest Road	Canada Larga Rd.	Foothill Road	Ventura Avenue	Ventura Avenue	Seaward Avenue	Canada Larga Road
Number of stop signs and traffic lights	1	3	1	1	5	1
Proximity to Spheres of Influence	0.25 mile (Ventura)	4.25 miles (Ventura)	Within sphere (Ventura)	Within sphere (Ventura)	Within sphere (Ventura)	No Sphere
Nearest Residential Development	0.5 miles (Norway Rd. & Spring St.)	4 miles (Southview Cir.)	0.5 miles (Dakota Drive)	0.2 miles (Norway Drive)	1.3 miles (Briarwood Ter.)	3.9 miles (Sycamore and Ojai Ave.)
Apartment Complexes	0	2	1	0	1	0
<u>Zoning:</u>						
o At Site	A-E	A-E	A-E	A-E	A-E	A-E
o Adjacent to Site	A-E	A-E	A-E	A-E (City Zoned Residential Single Family)	A-E	A-E
<u>Land Use Designation:</u>						
o At Site	O-S	O-S	Open Space (Urban Reserve)	Open Space (Urban Reserve)	Open Space (Urban Reserve)	O-S
o Adjacent to Site	O-S	O-S	Open Space (Urban Reserve)	Open Space (Urban Reserve)	Open Space (Urban Reserve)	O-S
Distance to Nearest Existing Park	0.5 mile (Foster Park)	4.6 miles (Soule Recreation Area & Park)	1.4 miles (Grant Memorial Park)	1.6 miles (Foster Park)	1.5 miles (Arroyo Verde Park)	3 miles (Soule Recreation Area and Park)
Areas of Archaeological Significance	0.5 mile Mission Aqueduct and future County Park	None	None	0.75 mile Mission Aqueduct and future County Park	None	5.7 miles Mission Aqueduct and future County Park

TABLE XIV-9 (Cont.)
Locational Characteristics for the
Six Candidate Disposal Sites Evaluated

	Site #1 Weldon Canyon	Site #2 Aliso Canyon Willoughby Road	Site #3 School Canyon	Site #4 Manuel Canyon	Site #5 Hall Canyon	Site #6 Hammond Canyon
Nearest Fault	500 feet Red Mt. Fault	3,000 feet Sulphur Mt. Fault	2,500 feet potentially active fault	6,000 feet Red Mt. Fault	20,000 feet Red Mt. Fault	1,500 feet Sulphur Mt. Fault
Distance to Nearest Fire Protection Service	0.4 miles (Ventura Ave./Canada Larga	9.1 miles (Tele- phone Rd./Mont- gomery Ave.)	2.25 miles (Wilson Ln/Ramona St.)	0.75 miles (Ventura Av/Canada Larga Rd)	4 miles (Main St./ Seaward Ave.)	6.5 miles (Ventura Ave/ Canada Larga Rd.)
Average Number of Homes Along Access Route	Less than 1 per mi.	9 per mile	20 per mile	5 per mile	30 per mile	Less than 1 per mile
Schools Operating Along Major Access Route	None	No Schools when using Wells Rd. access, two elementary schools Briggs Rd. access	The Avenue Elementary School	None	Ventura H.S. and a Day Care Center	None
Estimated Usable Land Area (Acres)	425 usable acres	950 usable acres	171 usable acres	150 usable acres	89 usable acres	*ND
Estimated Hauling Distance from Transfer Station	9.3 miles	16.6 miles	7.3 miles	8.6 miles	5.3 miles	15.3 miles
Estimated Site Life***	25.5 to 34.8 yrs.	35 to 49 years	10 years	9 years	5 years	*ND
Amount of Road Construction	2 to 3 miles	5 to 6 miles	2 to 3 miles	3 to 4 miles	4 miles	6 to 7 miles
Composite Rating	353	382	478 ¹	499 ¹	547 ²	**No compo- site score ³

Legend:

*ND - No Data

** - A composite score could not be obtained for this site since an on-site visit could not be conducted.

*** - An additional 100 acres would be available after the 10-15 year lease expires

**** - County estimated - site life estimates were based on 50,000 cubic yards of refuse per acre using .6 tons per cubic yard as a compaction rate.

1= Sites excluded since they are not large enough to provide for a combination oil field waste and refuse disposal site.

2= Site excluded based on discovery of fatal flaw and the fact that it is not large enough to provide for a combination oil field waste and refuse disposal site.

3= Owner does not want to make site available for use as a Class II disposal site therefore this site is excluded based on non-availability.

Source: Planning Division 1983

TABLE XIV-10
DISPOSAL SITE EVALUATION PROCESS

*A. 38 Sites Identified
in the 1976 CoSWMP and by
Site Proponents Were
Evaluated. (Step 1)

	<u>Waste Shed</u> <u>Area</u>
1. Weldon Canyon	(Western)
2. Aliso Canyon-Willoughby Rd.	(Western)
3. School Canyon	(Western)
4. Manuel Canyon	(Western)
5. Hall Canyon	(Western)
6. Hammond Canyon	(Western)
7. Canada Larga	(Western)
8. Shell Oil Field	(Western)
9. Aliso Canyon (Lower Portion)	(Western)
10. Seaton Ranch	(Western)
11. Leonard	(Western)
12. Dakota Drive	(Western)
13. Arroyo Las Posas	(Western)
14. Balcolm Canyon	(Western)
15. Javon Canyon	(Western)
16. Padre Juan Canyon	(Western)
17. Lake Canyon	(Western)
18. Pepper Tree Canyon	(Western)
19. Long Canyon	(Western)
20. Rincon Mountain	(Western)
21. South Mountain	(Central)
22. Reeves Road	(Western)
23. Barlow Canyon	(Western)
24. Santa Clara River North	(Western)
25. Santa Clara River South	(Western)
26. Maxwell	(Western)
27. Casitas	(Western)
28. Hartman Ranch	(Western)
29. Walker Ranch	(Western)
30. Alamos Canyon North	(Eastern)
31. Alamos Canyon South	(Central)
32. Brea Canyon	(Eastern)
33. Falkner Canyon	(Eastern)
34. MGM Properties	(Eastern)
35. Shiels Canyon	(Central)
36. Tapo Canyon	(Eastern)
37. Tripas Canyon	(Eastern)
38. Potrero Road	(Eastern)

*Note: Of the 38 sites evaluated, 9 were excluded based on site size requirements (project constraint B); (1b); 23 sites were excluded based on critical factors, 1 was excluded based on non availability of land; 2 were excluded based solely on site size, 1 was excluded based on site size and identification of a critical factor after a site visit. A total of 38 sites were evaluated by staff for which locations are provided in Figure XIV-9.

NOTE: This listing is also legend for Figure XIV-9

Source: Ventura County Planning Division 1983

TABLE XIV-10
DISPOSAL SITE EVALUATION PROCESS (Cont'd)

<u>B. Sites Excluded Based on</u> <u>Project Constraint A</u> <u>(not in critical</u> <u>Western Waste Shed)</u> <u>(Step 1)</u>	<u>C. Sites Excluded Based on</u> <u>Critical Factors (Step 1)</u>	<u>D. Sites Advanced</u> <u>and Rated Using</u> <u>Primary and Secondary</u> <u>Site Rating Criteria</u> <u>(Step 2)</u>
<ul style="list-style-type: none">o Alamos Canyon North and South (Eastern Waste Shed)o Brea Canyon (Eastern Waste Shed)o Falkner Canyon (Eastern Waste Shed)o MGM Properties (Eastern Waste Shed)o Shiells Canyon (Central Waste Shed)o Tapo Canyon (Eastern Waste Shed)o Tripas Canyon (10 sites Eliminated)o Potrero Road (Eastern Waste Shed)	<ul style="list-style-type: none">o Canada Largao Shell Oil Fieldo Aliso Canyon (Lower Portion)o Seaton Rancho Leonardo Dakota Driveo Arroyo Las Posaso Balcolm Canyono Javon Canyono Padre Juan Canyono Lake Canyono Pepper Tree Canyono Long Canyono Rincon Mountaino South Mountaino Reeves Roado Barlow Canyono Santa Clara River Northo Santa Clara River Southo Maxwello Casitaso Hartman Rancho Walker Ranch	<ul style="list-style-type: none">o Aliso Canyon-Willoughby Roado Hall Canyono Hammond Canyono Manuel Canyono School Canyono Weldon Canyon

TABLE XIV-10 (Cont'd)

E. Site Excluded Based
on Non-Availability

- o Hammond Canyon

F. Sites Excluded Based
on Insufficient Site
Size, Identified After
Site Visits (Step 2)

- o Manuel Canyon
- o School Canyon

G. Site Excluded Based
on Identification
of a Critical Factor
After Site Visit

- o Hall Canyon

H. Draft Plan
Sites Selected (Step 3)

- o Weldon Canyon
- o Aliso Canyon/
Willoughby Rd.

I. Sites Selected in Final
Draft Plan

- o Weldon Canyon
- o Hammond Canyon
- o School Canyon (Canada
de San Joaquin)

4. Results of the Rating Process

Site visits to the five sites were conducted during the spring of 1983, which was an extremely high rainfall year. The Ventura County Flood Control District recorded rainfall at 190 percent of normal.

Therefore all 5 sites were evaluated under extreme hydrological conditions. After the site visits were conducted, the Hall Canyon Site was found to contain a critical factor, which could not be discerned using available data. It was discovered that movement of landslides adjacent to access roads in the Canyon could preclude all weather access to the site. The access road to Hall Canyon site is extremely poor. This access requires trucks to maneuver through heavy traffic up Seaward Avenue, past the high school, and negotiate tight turns on steep grades. In addition the site is too small (89 acres) to provide for a long-term disposal site. Therefore, the Hall Canyon Site was excluded from further consideration.

A consultant was retained by the County to evaluate in greater detail the three remaining sites: Aliso, School, and Weldon Canyons. Table XIV-11 summarizes the consultant's review of the three candidate sites.

During the site visit at the Manuel Canyon Site it was found that the configuration and steepness of the canyon made it impractical for maneuvering vehicles and conducting disposal site operations within the Canyon. In addition, there is currently no right-of-way or usable access to the small 150 acres Manuel Canyon site. This site does not meet the minimum site size requirement. Therefore, this site was also excluded from further consideration for this CoSWMP update.

During the site visit at School Canyon it was determined that the School Canyon Site was too small (171 acres) for a municipal waste disposal site. A large portion of land (100 acres) at the site was currently being leased, and was believed not available for 20 to 25 years. Therefore, the School Canyon Site was found not to meet the minimum site size required and was excluded from further consideration.

As a result of the rating process and application of CoSWMP site evaluation criteria, two sites were recommended as tentative landfill sites in the Draft CoSWMP were:

- o Weldon Canyon (Composite Score 353)
- o Aliso Canyon-Willoughby Road (Composite Score 382)

14.4 REVIEW OF DRAFT PLAN

A. Public Review

The recommended tentative municipal waste landfill sites (Weldon and Aliso Canyons) were included in the Draft CoSWMP released in July 1983 for public review. Both of the recommended sites were opposed by some citizens living near the site or along major access routes.

Some city representatives and others who reviewed the Draft Plan suggested additional tentative landfill sites should be included in the Plan. During the review of the Plan, the owners of the School Canyon site informed the County the site area assumed for a landfill on their property

TABLE XIV-11

CONSULTANT'S COMPARISON OF THE THREE CANDIDATE SITES

	<u>Weldon Canyon</u>	<u>Aliso Canyon- Willoughby Road</u>	<u>School Canyon (Canada de San Joaquin)</u>
Adequate site area available for both solid and non-hazardous oil field waste disposal	Yes	Yes	No
Estimated usable land area (acres)	425	950	171
Estimated site capacity for solid waste disposal (million cubic yards)	29.5	41.5	9
Adequate level terrain for non-hazardous oil field waste disposal-landfarming method	No	No	No
Site visible from public view	No	No	No
Site access from major highway (miles)	1<	7	2
Major residential or commercial developments along access route	No	Yes	Yes
Existing developments (i.e., utilities, oil/gas or water pipelines) within the site area that potentially may need to be relocated or altered	Yes	No	N.D.
Bedrock formation underlying the site area	Pico	Pico	Pico/Santa Barbara
Permeability of the bedrock formation	Low ¹	Low ¹	Low ¹
Alluvial deposits present at the site	Yes	Yes	Yes
Permeability of the alluvial deposits	Low	Low-Moderate ²	N.D.
Landslides present at the site (size)	Yes	Yes	Yes
Cover material present within or adjacent to the site	Yes	Yes	Yes
Existence of ground water underlying the site	Yes ³	Yes ³	N.D.

TABLE XIV (Continued)

CONSULTANT'S COMPARISON OF THE THREE CANDIDATE SITES

	<u>Weldon Canyon</u>	<u>Aliso Canyon- Willoughby Road</u>	<u>School Canyon (Canada de San Joaquin)</u>
Existence of usable ground water underlying the site	No	No	No
Ground water quality	Poor	Moderate	N.D.
Existence of surface water at the site	Yes	Yes	Yes
Existence of springs at the site	Yes	N.D.	N.D.
Surface water quality	Poor	Moderate	N.D.
Site drains to usable ground water basin/name	No/Lower Ventura River	Yes/Santa Paula	No/Lower Ventura River
Proximity of active/potential active faults name/distance	Red Mountain/ 500 feet	San Cayetano 3000 feet	Unnamed fault 2500 feet
Potential for landslide or surficial slumps	Yes	Yes	Yes
Potential for surface erosion	Yes	Yes	Yes
Potential for vertical ground water migration/seepage	Yes ⁴	Yes ⁴	Yes ⁴
Potential for lateral ground water migration/seepage	Yes	Yes	Yes

1 - Fine-grained sediments (siltstone, mudstone, shale) in the Pico formation

2 - Insufficient data for general characterization

3 - Perched ground water in alluvial deposits

4 - Primarily the coarse-grained sediments (sandstone and conglomerate) in the Pico formation and sandy to gravelly alluvial deposits

5 - Grading would be required to obtain sufficient level land area of the hillside disposal method or other disposal methods could be used

N.D. - No Data

was too low, because the leased portion of their site actually was also available for use as a landfill.

B. Solid Waste Task Force Review

In response to public comments, on November 1, 1983, the Ventura County Board of Supervisors directed staff to study, among other issues, inclusion of additional sites in CoSWMP. This issue was reviewed by a special "Task Force" of elected officials created by the Board: the Solid Waste Task Force.

The Solid Waste Task Force (made up of two County Supervisors and six council members representing cities of Oxnard, Ventura, Simi Valley, Moorpark, Ojai and Santa Paula) discussed the inclusion of additional tentative landfill sites in CoSWMP on July 25, 1984 (see Appendix E). They concurred with the staff assessment that the methodology used to exclude sites containing critical on-site factors was valid. They recommended the School Canyon site, originally excluded due to its supposed small size, be included in response to the corrected site area.

Staff noted the Hammond Canyon site had been removed from consideration due to the opposition of its owners. It was noted Hammond Canyon lacked any on-site critical factors, was the largest of the six sites rated, and that it compared favorably to other sites to the extent it was rated. The Task Force concurred with the staff recommendation that it be considered as a tentative landfill site.

C. Board of Supervisors Policy Direction

On September 4, 1984, the Ventura County Board of Supervisors received the staff report on the special studies requested on November 1, 1983. This included the Solid Waste Task Force recommendations on inclusion of School and Hammond Canyons as additional tentative municipal waste landfills. Public testimony was taken, including many statements by individuals, companies, and organizations opposed to the Aliso Canyon site.

After discussion, the Board of Supervisors accepted the inclusion of both School and Hammond Canyons as tentative sites, but directed that Aliso be deleted as a tentative landfill site. The Board noted the potential, adverse impact to agriculture along the access route (Aliso Canyon Road) and the threat to a major municipal water source (Santa Clara River) should on-site mitigation measures fail. These impacts were deemed to be unique to the site, distinguishing it from the other three tentative landfill locations. Aliso Canyon was deleted from consideration.

On October 30, 1984, the Board of Supervisors, after receiving testimony from the City of Ventura, removed School Canyon as well. Two tentative municipal waste landfill sites in the western watershed are included in the Final Draft Plan:

Weldon Canyon (Composite Score: 353)

Hammond Canyon (Composite Score: 415 per staff estimate)

14.5 DESCRIPTION OF CANDIDATE DISPOSAL SITES

The following provides descriptions of candidate sites compiled as part of the site evaluation process. Information provided was obtained from available maps and site visits.

A. SITES IDENTIFIED AS TENTATIVE MUNICIPAL WASTE LANDFILL SITES IN VENTURA COUNTY SOLID WASTE MANAGEMENT PLAN

1. Weldon Canyon

a. General

The entrance to the Weldon Canyon site is located approximately 100 feet northeast of Route 33 and Canada Larga Road (Assessor Parcel Nos. 35-150-1, 2 [part] and 35-210-12, 16 [part]) (refer to Figure XIV-3). The Weldon Canyon site contains approximately 425 acres of usable land. The Weldon Canyon site had a composite rating of 353 points.

It is estimated that this site would provide at least 35 years of disposal capacity for municipal refuse. Extensive to moderate grading would need to be conducted at the site in order to realize full capacity for oil field waste. In addition, power lines currently located on a mountain top between the branching canyons may need to be relocated in order to substantially increase site capacity. Site capacity could also be increased by expanding disposal operations into Canada De Aliso which is located a half mile east of Weldon Canyon.

The site was identified as a tentative landfill in the Draft CoSWMP. Its inclusion in the Final Draft CoSWMP was reaffirmed by the Board of Supervisors on September 4, 1984.

b. Roads

The freeway off-ramp at Canada Larga Road may need to be widened to provide additional room for vehicles not going to the site to make left turns onto Canada Larga Road. Alternatively, a new off-ramp might be created. Such road improvements would have to be coordinated with CALTRANS. "Straight-in" access to Weldon Canyon can easily be provided by redesigning the current unimproved access road on site. The proposed disposal area is approximately 1/2 mile from the existing Route 33 off-ramp. There is a steep grade of approximately 10 percent at the entrance to Weldon Canyon. Therefore, the site entrance will require regrading to a more moderate grade of 5 percent or less. All roads on site are unimproved dirt roads, except for a 1/4 mile gravel road at the site entrance, and are presently maintained by an oil company which operates three oil rigs in the north end of the canyon. The oil company provides electricity to the site in order to operate their pumps. This power source could be used for disposal site operations. In addition, a gas pipeline is located in the main canyon. On the south side of Canada Larga Road, approximately 200 feet from the Route 33 off-ramp, is the only standing remains of the Mission Aqueduct. The area surrounding the aqueduct has recently been purchased by the County and is proposed to be operated as a park. Although trucks would not pass directly by the aqueduct, vibrations from additional truck traffic in the area may have an effect on the aqueduct (Refer to Environmental Impact Report).

Off-site access from Canada Larga Road to the site is comprised of a two lane asphalt road with a grade of 1% or less. The on-site access is comprised of an unimproved dirt road with a maximum 10 percent grade at the site entrance with 5 percent or less grades throughout the canyon. Access road visibility at Canada Larga Road is adequate (approximately 300 feet); however, trucks would be required to make a short right turn and left turn to the site access road.

It is estimated that approximately 2 to 3 miles of new roadbed would need to be provided for this site. This would cost approximately 2.25 million dollars for offsite improvements including necessary freeway offramp modifications, and 2 million dollars for on-site road improvements for an estimated total of 4.25 million dollars (Reference XIV-47). A scale and scale house would also be needed as with all the sites evaluated. No bridges would be required to get to the site. However, approximately four areas on-site would require culverting and

Staff noted the Hammond Canyon site had been removed from consideration due to the opposition of its owners. It was noted Hammond Canyon lacked any on-site critical factors, was the largest of the six sites rated, and that it compared favorably to other sites to the extent it was rated. The Task Force concurred with the staff recommendation that it be considered as a tentative landfill site.

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After discussion, the Board of Supervisors accepted the inclusion of both School and Hammond Canyons as tentative sites, but directed that Aliso be deleted as a tentative landfill site. The Board noted the potential, adverse impact to agriculture along the access route (Aliso Canyon Road) and the threat to a major municipal water source (Santa Clara River) should on-site mitigation measures fail. These impacts were deemed to be unique to the site, distinguishing it from the other three tentative landfill locations. Aliso Canyon was deleted from consideration.

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a. General

The entrance to the Weldon Canyon site is located approximately 100 feet northeast of Route 33 and Canada Larga Road (Assessor Parcel Nos. 35-150-1, 2 [part] and 35-210-12, 16 [part]) (refer to Figure XIV-3). The Weldon Canyon site contains approximately 425 acres of usable land. The Weldon Canyon site had a composite rating of 353 points.

It is estimated that this site would provide at least 35 years of disposal capacity for municipal refuse. Extensive to moderate grading would need to be conducted at the site in order to realize full capacity for oil field waste. In addition, power lines currently located on a mountain top between the branching canyons may need to be relocated in order to substantially increase site capacity. Site capacity could also be increased by expanding disposal operations into Canada De Aliso which is located a half mile east of Weldon Canyon.

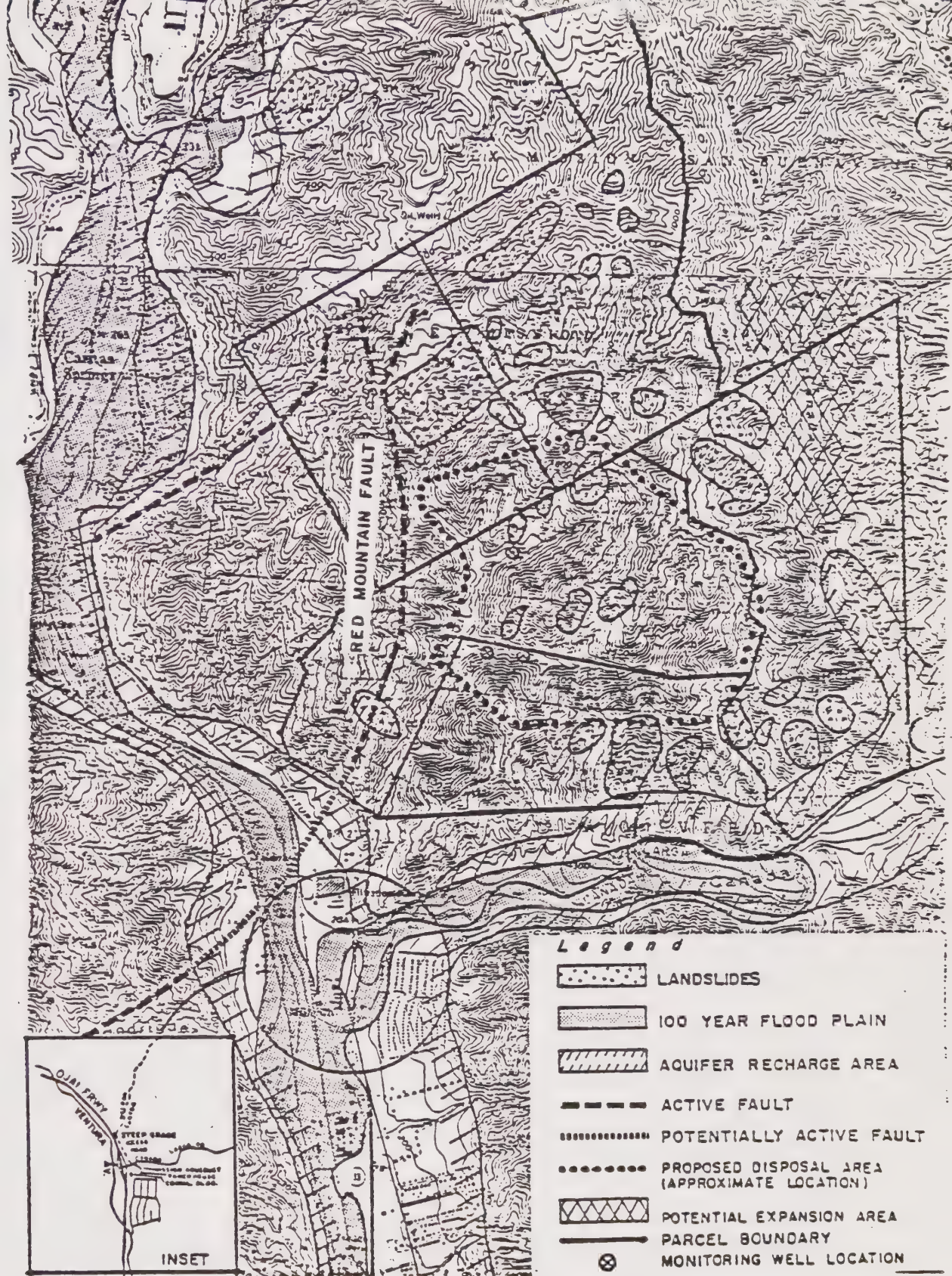
The site was identified as a tentative landfill in the Draft CoSWMP. Its inclusion in the Final Draft CoSWMP was reaffirmed by the Board of Supervisors on September 4, 1984.

b. Roads

The freeway off-ramp at Canada Larga Road may need to be widened to provide additional room for vehicles not going to the site to make left turns onto Canada Larga Road. Alternatively, a new off-ramp might be created. Such road improvements would have to be coordinated with CALTRANS. "Straight-in" access to Weldon Canyon can easily be provided by redesigning the current unimproved access road on site. The proposed disposal area is approximately 1/2 mile from the existing Route 33 off-ramp. There is a steep grade of approximately 10 percent at the entrance to Weldon Canyon. Therefore, the site entrance will require regrading to a more moderate grade of 5 percent or less. All roads on site are unimproved dirt roads, except for a 1/4 mile gravel road at the site entrance, and are presently maintained by an oil company which operates three oil rigs in the north end of the canyon. The oil company provides electricity to the site in order to operate their pumps. This power source could be used for disposal site operations. In addition, a gas pipeline is located in the main canyon. On the south side of Canada Larga Road, approximately 200 feet from the Route 33 off-ramp, is the only standing remains of the Mission Aqueduct. The area surrounding the aqueduct has recently been purchased by the County and is proposed to be operated as a park. Although trucks would not pass directly by the aqueduct, vibrations from additional truck traffic in the area may have an effect on the aqueduct (Refer to Environmental Impact Report).

Off-site access from Canada Larga Road to the site is comprised of a two lane asphalt road with a grade of 1% or less. The on-site access is comprised of an unimproved dirt road with a maximum 10 percent grade at the site entrance with 5 percent or less grades throughout the canyon. Access road visibility at Canada Larga Road is adequate (approximately 300 feet); however, trucks would be required to make a short right turn and left turn to the site access road.

It is estimated that approximately 2 to 3 miles of new roadbed would need to be provided for this site. This would cost approximately 2.25 million dollars for offsite improvements including necessary freeway offramp modifications, and 2 million dollars for on-site road improvements for an estimated total of 4.25 million dollars (Reference XIV-47). A scale and scale house would also be needed as with all the sites evaluated. No bridges would be required to get to the site. However, approximately four areas on-site would require culverting and



SOURCE:
Ventura County
Resource
Management
Agency
Planning
Division
1983

WELDON CANYON

Figure XIV-3

1"=2000'

regrading. The access to the Weldon Canyon site is superior to other sites evaluated in that there is direct access to the site from a freeway.

c. Hydrology/Geology

Intermittent springs, which were considered surface water since they flow due to gravity (refer to definitions), were noted in the bottom of Weldon Canyon. These springs contain water with a yellow-orange tinge possibly indicating high sulfate content (refer to Appendix D). The springs could be tiled and the water diverted, collected and evaporated in a retention pond which would need to be constructed at the base of the main canyon. It would cost approximately \$300,000 for a retention pond to be built at the site to hold, evaporate and treat any water that would be coming from the site. Another alternative may be to divert spring water around the landfill. The drainage water flow in Weldon Canyon is 1,450 cubic feet/second. The site is considered to be in a confined groundwater area and does not overlie groundwater usable for drinking water purposes. The groundwater quality within the basin is reported to be at least 2,000 TDS or higher (Appendix D).

In the upper portion of Weldon Canyon a classic small outcropping of Pico formation was observed which has a low permeability soil associated with it. However, surficial soils in the area are reported by the USGS to be, in general, somewhat less characteristic of this situation. In the two branches of the main canyon, areas of dark brown to black mud stone, silt stones and shales were observed. In general, the soils at the site appeared to be adequate as far as permeability and availability of cover material were concerned (Appendix D).

The Red Mountain Fault is located at its closest point approximately 500 feet northwest of Weldon Canyon's disposal area. However, more detailed studies would be conducted during the permitting stage.

d. Flora and Fauna

Some oak trees were observed in the center of the main canyon. However, the predominant habitat within Weldon Canyon is native grasslands. No endangered species were noted at the site.

e. Land Use

Along the short 100 foot distance traveled from the Route 33 off-ramp to the site there is only one stop sign, which is located at the end of the off-ramp. There are no apartment houses or operating schools from Route 33 to the site. The area surrounding the site access road is mainly industrial and commercial. However, land on the south side of Canada Larga Road east of Highway 33 is being proposed by the County and the City of Ventura to be designated residential in the proposed North Ventura Avenue Plan. Although one house is located approximately 300 feet east of Route 33 up Canada Larga Road, trucks would not be driving directly past the house when using the access road. Considering that a transfer station would be built (i.e., proposed Bailard landfill), transfer trucks could utilize freeway Routes 101, and 33, for approximately 80 percent of the distance traveled to the site. The site is within 3 miles of major oil field waste generators located along Ventura Avenue. The site is approximately 2.5 miles from the City of Ventura, a major generator of refuse.

The Weldon Canyon site is not visible from surrounding areas. This site is 0.4 miles from the nearest Fire Protection Services located at Ventura Avenue and Canada Larga Road.

The Weldon Canyon site is approximately 9.3 miles from the proposed transfer station (also proposed Bailard landfill) and is the third closest site to the proposed transfer station of the six (6) sites (refer to Chapter XIII).

f. Weldon Canyon Site Evaluation Summary

The site appears to be a viable tentative location for establishing a municipal waste disposal site. Favorable site characteristics and potential site development limitations are as follows:

(1) Favorable Site Characteristics

- o This site is large enough (425 acres of usable land) to accommodate refuse disposal operations for 35 years. This is the third largest of the sites evaluated.
- o The site is not within a 100-year flood plain.
- o The site is not subject to liquifaction.
- o Drainage from the Weldon Canyon site is tributary to the lower portion of the Ventura River, where water is not considered to be usable for drinking water purposes.
- o Soils within the canyon area have good permeability characteristics and it is estimated that there is enough soil available to be used for cover material within and adjacent to the site.
- o There is no known potable (usable for drinking water purposes) groundwater underlying the site.
- o This site has the most direct access from the freeway (Route 33, 100 feet) of all the sites evaluated, and there are very few residential or commercial buildings located nearby. Therefore, impacts on homes and commercial establishments would be minimized.
- o The cost of providing access to the site is estimated to be 2.25 million dollars for offsite road improvements, and 2 million dollars for onsite road improvements (Reference XIV-47).
- o While there are some small, scattered landslides, the site is free of massive landslides.
- o The site is located approximately 2.5 miles from the City of Ventura, which is a major generator of refuse located in the western watershed (refer to Chapter IV).
- o This site is well screened from surrounding properties in all directions.

- o This site is approximately .4 miles from Fire Protection Services located at Ventura Avenue and Canada Larga Road.
- o This site is approximately 9.3 miles from the proposed transfer station (refer to Chapter XIII).

(2) Potential Site Limitations

- o The site is located at one point 500 feet east of the Red Mountain fault which has been designated as an active fault (Holocene).
- o The Mission Aqueduct, although not located on the site, is approximately 200 feet from the site entrance and may potentially be affected by vibrations from nearby truck traffic. The Mission Aqueduct site has been purchased by the County for use as a park.
- o Land within a half mile of the site on the south side of Canada Larga Road east of Highway 33 is designated Residential in the North Avenue Plan. This land use designation may be incompatible with disposal site operations.
- o Surface water, which flows to springs due to gravity water flow, is located at this site. Mitigation will require collection and retention including tiling of water courses and construction of a retention pond. In addition, cut-off structures may need to be provided to prevent lateral migration.
- o The access road from Canada Larga Road will need regrading to a more moderate grade and may need to be redesigned in order to provide straight in access to the site. The freeway offramp may need widening to allow room for vehicles not going to the site to turn left on Canada Larga Road. It is estimated these offsite road improvement costs will be 2.25 million dollars (Reference XIV-47).
- o Moderate to extensive grading will need to be accomplished to provide gently sloping areas for landfarming oil field waste.
- o If the site life is to be increased beyond that estimated, power and utility lines located at the site may need to be relocated. (Note: The 35 years of site life estimate is based on the powerlines not being moved).
- o The site is in an area having small to medium sized scattered landslides which may require some regrading or removal. However, this material may be used for cover.
- o Specific locations within the canyon may have some deposits of moderately permeable soils that may require lining. However, since low permeability soils are also present within the canyon, they might be used to prevent vertical migration of leachate in small areas having moderately permeable soils.

2. Hammond Canyon

a. General

Hammond Canyon is located approximately 6 miles east of Route 33 and is accessible by using Canada Larga Road.

Hammond Canyon is approximately 8.5 miles east of the City of Ventura and approximately 4 miles south of the city limits of Ojai (15 points) (A.P. Nos. 35-070-23; 35-170-1, 2; 35-180-1, 4; 35-190-1 and 35-220-2) (Figure XIV-4). A site visit could not be conducted at the Hammond Canyon site since the owner would not allow access to the site. Therefore, Hammond Canyon was initially given an incomplete rating and did not obtain a composite score in the Draft CoSWMP score.

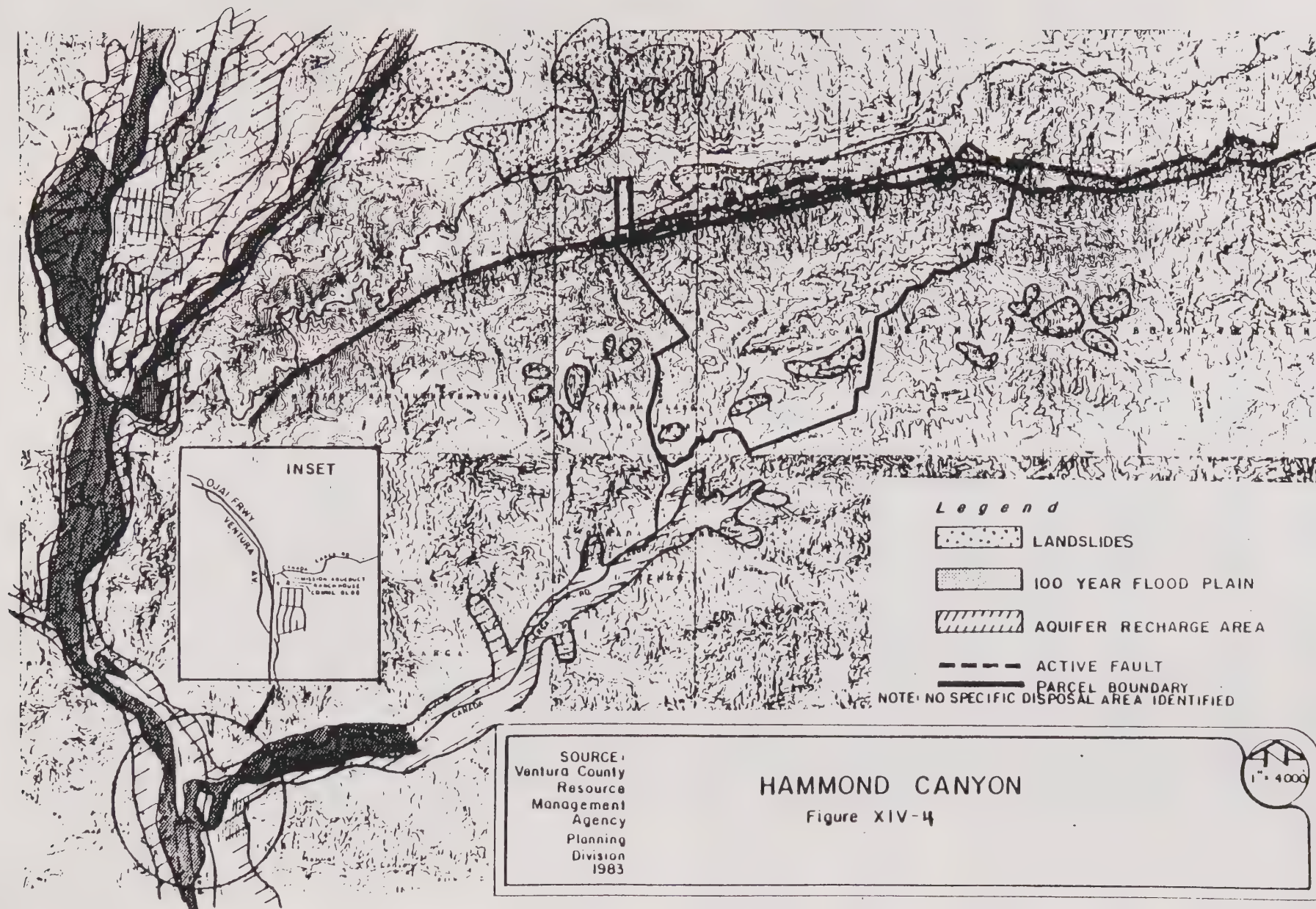
The site was not included as a tentative landfill site in the Draft CoSWMP because of the owner's desire that the property not be so designated. During preparation of the Final Draft CoSWMP, it was decided opposition of an owner was not sufficient justification to remove an otherwise technically viable site from consideration. On September 4, 1984, the Board of Supervisors directed that Hammond Canyon be included in the plan as a tentative municipal waste landfill. The rating process was completed using aerial photos. Hammond Canyon's composite score is estimated by County staff to be 415. This was third lowest of the six sites rated. The site appears to have a usable area larger than any of the other sites.

b. Roads

Hammond Canyon is accessible from Route 33 via Canada Larga Road. The eastern portion of Canada Larga Road is in disrepair and subject to both washout and flooding during periods of heavy rain. In order to make this site more accessible, approximately 4-5 miles of offsite road improvements would be required. Costs could range as high as 6 to 7 million dollars due to the need for a new bridge and extensive drainage modifications. The roads on-site could not be assessed since a site visit could not be made. However, estimates of 6-8 million dollars have been made (Reference XIV-47). Total road costs for both on-site, as well as offsite, improvements are estimated to be 13 to 14 million dollars.

c. Flora and Fauna

The flora and fauna at Hammond Canyon could not be assessed, but it is believed similar to adjoining areas and to have areas of oak and native grasses.



d. Hydrology/Geology

According to U.S. Soil Conservation Service maps, the predominate soils in Hammond Canyon are shale loams and sandy loams of the Pico formation (10 points). The upper end of the canyon is approximately 1,500 feet from the Sulphur Mountain fault which is known to be an active fault (10 points). There is no data to indicate the presence of usable groundwater (water usable for drinking water purposes) underlying Hammond Canyon (30 points). The drainage flow rate for Hammond Canyon is 2,250 cubic feet/second.

e. Planning

There are approximately three houses from Route 33 to Hammond Canyon. Trucks traveling on Canada Larga Road would have to pass directly by the Mission Aqueduct which has been purchased by the County for a park. There is only one stop sign located at the Route 33 exit. Fire protection services are available approximately 6.5 miles away at Ventura Avenue and Canada Larga Road.

The Hammond Canyon site is approximately 15.3 miles from the proposed transfer station and is the second most distant site from the transfer station of all the sites evaluated (refer to Chapter XIII).

f. Hammond Canyon Site Evaluation Summary

A site visit could not be made to the Hammond Canyon site. Therefore, this evaluation is based on available information and review of aerial photos, but not on a site visit.

(1) Favorable Site Characteristics

- o There are no massive landslides, liquifaction zones, or 100 year flood plains within the site.
- o This canyon site is well isolated from neighboring residential areas. The nearest established residential development is approximately 7 miles away.
- o The site does not overlies earthquake faults.
- o The site is not known to be overlying usable groundwater (groundwater usable for drinking water purposes) and it has soils with suitable permeability characteristics.
- o The access route from Route 33 to Canada Larga Road to Hammond Canyon passes by few homes and commercial buildings.
- o The site has the third lowest composite score (415). According to County staff's interpretation of aerial photos.
- o This is the largest of the sites rated, appearing to have in excess of 1,000 acres of usable land.

(2) Potential Site Limitations

- o The owner has expressed opposition to establishing a disposal site on this property. Establishing disposal site operations would apparently require exercise of the public power of eminent domain.
- o Access to Hammond Canyon would require trucks to pass directly by the Mission Canyon Aqueduct which has been purchased by the County for a park. Vibrations from truck traffic passing directly by the aqueduct may have potential effects on the structure.
- o The eastern portion of Canada Larga Road is subject to flooding and washout during periods of heavy rain; Canada Larga Road may require 4-5 miles of costly road improvements, including a new bridge and extensive drainage improvements to obtain all weather access.
- o Hammond Canyon is located approximately 1,500 feet southwest of the Sulfur Mountain fault which has been designated as an active fault (Holocene).
- o Hammond Canyon is approximately 15.3 miles from the proposed transfer station (refer to Chapter XIII).

B. SITES EXCLUDED AS TENTATIVE MUNICIPAL WASTE LANDFILL SITES IN VENTURA COUNTY
SOLID WASTE MANAGEMENT PLAN

1. School Canyon (Canada De San Joaquin)

a. General

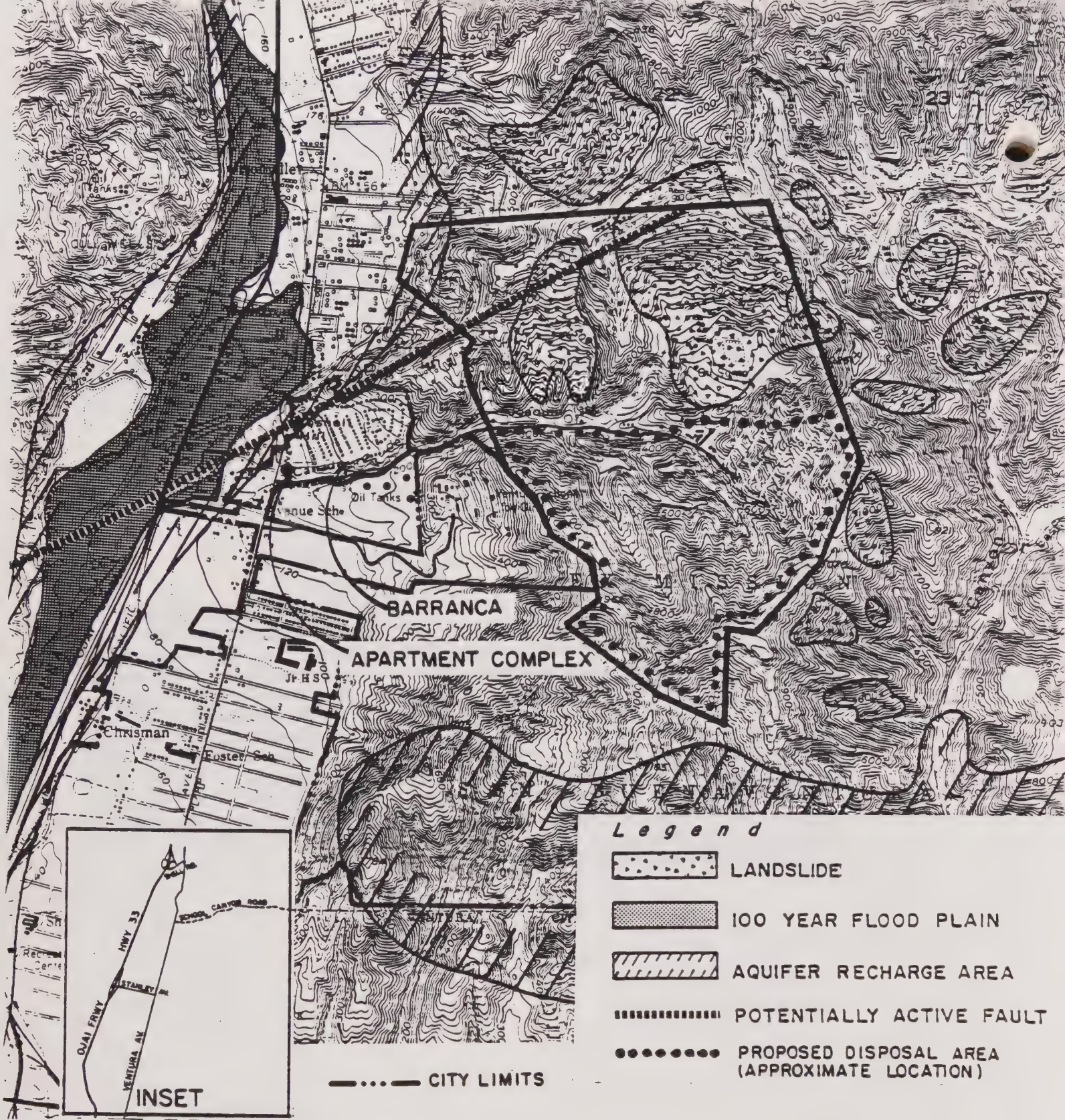
This site was initially considered by the City of Ventura in its 1970 Solid Waste Disposal Study and was also considered in the 1967 General Plan of Refuse Disposal, prepared by the Ventura County Department of Public Works.

This site is comprised of 271 acres of usable land, located in two canyons off Ventura Avenue adjacent to the Ventura City limits in one of the County's major oil production areas (AP Numbers 64-080-1; 64-150-09) (Figure XIV-5). The estimated site life is approximately 20-25 years.

This site was removed as a tentative landfill by the Board of Supervisors on October 30, 1984, following testimony by the City of Ventura of its concerns with inadequate access and potential for adverse impacts on its citizens.

b. Roads

The main access route to this site is from Route 33 to the Shell Road exit east to Ventura Avenue south to the Getty Oil Company turnoff at School Canyon Road. The site is approximately 1-3/4 miles East on School Canyon Road. It is approximately 1.9 miles from Route 33 to School Canyon Road via Shell Road. The access route mainly adjoins industrial oil operations. However, there are two residential areas, one located approximately a half mile to the northwest and one mile to the southwest (35 points). San Juan Barranca is located near the site along the northside of School Canyon Road and provides a buffer area between the access road and nearby homes. The access road to the site is a private two lane asphalt road with a ± 3 percent grade which needs widening and upgrading at a cost of approximately \$462,000, which includes widening a bridge near the site.



A quarter mile long stacking lane, for trucks awaiting entrance to the site, would need to be constructed at an estimated cost of \$66,000. Visibility at the intersection of School Canyon Road and Ventura Avenue is adequate. An apron would need to be installed at an approximate cost of \$10,000. Other improvements to Ventura Avenue may be needed in order to accommodate additional truck traffic to the disposal site.

c. Flora and Fauna

No endangered species were observed at the site. The predominant habitats at the site are oak woodland and native grassland.

d. Geology/Hydrology

The soil in the canyons is mainly pico and sandstone. Deposits of highly to moderately permeable soils such as shalestones and sandstones may need to be overlain with low permeability soil to prevent vertical migration or seepage. This soil could be transported from Hall Canyon, which is owned by the same company and located approximately 3 miles to the east. However, soil deposits in the bottom of the canyon indicate that the pico formation does contain some clays.

There is no known usable groundwater (usable for drinking water purposes) underlying the site, and the pico formation in this area contains unusable saline water. Surface water run-off could easily be collected at the mouth of the canyon in a retention pond. The drainage water flow rate within the site is 361 cubic feet/second. No active faults (Holocene) have been mapped within the proposed disposal area. However, there is a potentially active fault located at its closest approach, approximately 2,500 feet to the north of the site.

e. Planning

Disposal operations would be compatible with current industrial land uses (mainly oil production) in the area. However, this site is located in an area with a land use designation of open space/urban reserve. Therefore, site operations could possibly be affected in the future by encroachment. The canyons that would be used for disposal are not visible from surrounding areas. There is an average of 20 homes per mile along the Ventura Avenue and School Canyon Road access route; it is approximately one mile from the proposed disposal area to residential developments toward the northwest and one mile to residential developments toward the southwest. One apartment complex is located off Ventura Avenue northwest of School Canyon Road. There is one stop sign via Shell Road and one traffic light if the alternate access route, Stanley Road, is used. There is one elementary school located on the west side of Ventura Avenue south of School Canyon Road. This site is approximately 2.2 miles from the nearest Fire Protection Services located at Wilson Lane and Ramona Street. The site adjoins the old Ventura School for Girls property.

The School Canyon (Canada de San Joaquin) site is approximately 7.3 miles from the proposed transfer station and is the second closest site to the transfer station of all the sites evaluated (refer to Chapter XIII).

f. School Canyon Site Evaluation Summary

Due to problems of inadequate access and the potential for adverse impacts on residences, schools, and other facilities, School Canyon (Canada de San Joaquin) was not selected as a tentative site. A summary of positive and negative features follows:

(1) Favorable Site Characteristics

- o This site is located close to a city which generates a major amount of solid waste and has the shortest haul distance of the three tentative sites.
- o This site is not known to overlie usable groundwater (groundwater usable for drinking water purposes); the Pico formation underlying the site is designated as a saline or non-water bearing formation.
- o The site is well hidden from view from nearby residential areas.
- o Suitable cover material is present on or adjacent to the site.
- o The site is approximately 7.3 miles from the proposed transfer station.
- o The site has 271 usable acres.

(2) Potential Site Limitations

- o This site is located approximately 2,500 feet south of a potentially active fault.
- o The access road from the Route 33 Freeway to Shell Road to Ventura Avenue to School Canyon Road passes by an average of 20 homes per mile and one apartment complex.
- o The access road from Ventura Avenue to the site is approximately 2 lanes on Ventura Avenue and 1½ to 2 lanes wide on School Canyon Road. This road will need widening and possibly require reconstruction and widening of a bridge adjacent to and east of the site. In addition, if the alternate access road, Route 33 to Stanley St., to Ventura Avenue to School Canyon Road is used, trucks would be required to pass by a school.
- o Areas of sandstone and other permeable soils, at the site would need to be lined and cut-off structures, or retention ponds installed to prevent any lateral migration and seepage.
- o Small to moderate landslides in the area may need corrective measures to increase stability.
- o This site is adjacent to the Ventura City limits and is within its Sphere of Influence. In addition, this site is located on

land with a land use designation of open space/urban reserve. Therefore, this site is subject to future encroachment from surrounding areas.

- o This site comprises 271 usable acres which are available for disposal purposes.

2. Aliso Canyon - Willoughby Road

a. General

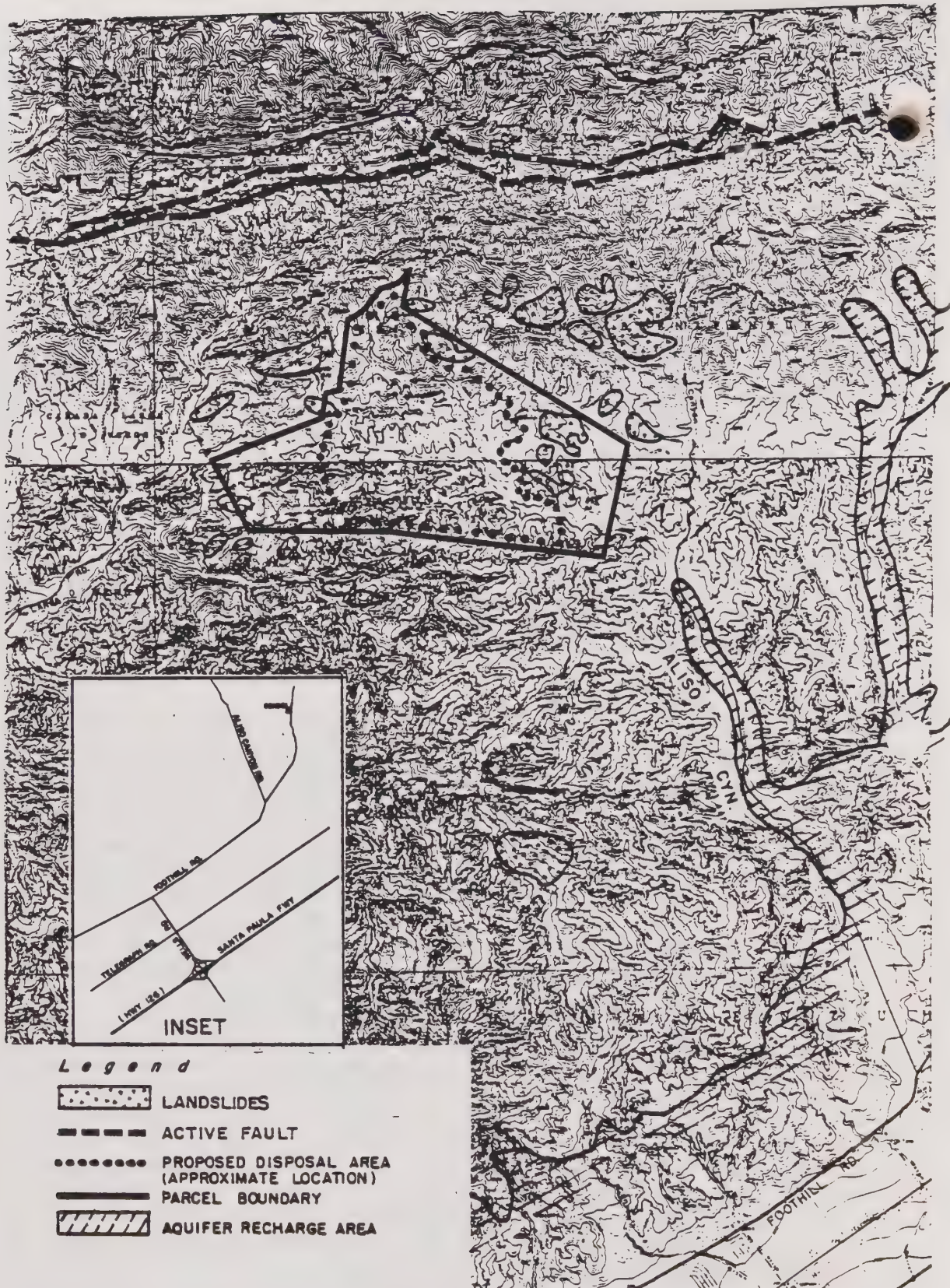
This site is located approximately 5.2 miles northeast of the limits of the City of Ventura. This site contains approximately 950 acres of usable land. This site has a service life estimated to be at least 35 and it may last as long as 50 years. The site is approximately one mile west of Aliso Canyon near the far end of Willoughby Road (A.P. Numbers 35-200-01, -02) (Figure XIV-6). This site has a composite score of 382 points (Table XIV-8).

The site was included as a tentative landfill in the Draft CoSWMP. During public review, the site was strongly criticized. In addition to general comments about access, Aliso Canyon was criticized for its potential adverse impacts on drinking water sources and adjacent citrus and avocado orchards. On September 4, 1984, the Board of Supervisors directed Aliso Canyon be removed from the Plan and not considered as a tentative landfill.

b. Roads

The off-site access (public road) is a two lane asphalt road which runs from Route 126 to within 4 miles of the site where it changes to a one to one and a half lane asphalt road. Access roads are relatively flat (± 2 grade). There are a total of three stop signs and traffic signals along the access road. However, an additional traffic signal may be needed for trucks turning left from the Route 126 off-ramp onto Wells Road. Road improvements be to Well Road, Briggs Road and Foothill Road, is estimated to cost 2 million dollars (Reference XIV-47). The 2.0 mile County section of Aliso Canyon Road would require widening from 16 feet to 24 feet, at an estimated cost of approximately \$1,184,500 (Reference XIV-47). However, there are two houses located diagonally across from each other on opposite sides of the road but there may still be ample room for widening the road. The intersection of Foothill Road and Aliso Canyon Road provides adequate visibility and has an apron area to assist traffic merging from Aliso Canyon to Foothill. However, an important factor is the mix of traffic on Foothill. The narrowest portion of Aliso Canyon Road is close to two houses. This portion of the road will require widening.

The 2 mile private section of Aliso Canyon Road, beyond the County portion, needs extensive upgrading at approximately \$1,648,300. The additional improvements required for the remaining 0.7 miles to the site is estimated to cost \$1,258,600. This cost estimate is moderate since there is no need for bridges or extensive drainage improvements. However, two creek crossings need culverts and grading in addition to providing approximately two miles of roads within the Canyon area. Considering engineering design and contingencies, the total cost of access to the site using Foothill Road is estimated at 8 million dollars (excluding onsite road improvements). There is a water line



SOURCE:
Ventura County
Resource
Management
Agency
Planning
Division
1983

ALISO CANYON WILLOUGHBY RD. (SITE 2A)

Figure XIV-6



adjacent to Aliso Canyon Road that provided water to the residents. This water line would need to be paved over. The alternate access to the site would be from Route 126 to Briggs Road to Foothill Road to Aliso Canyon Road. In addition, the owner of the Aliso Canyon-Willoughby Road Site has a deed to the right-of-way across the property to the west which could provide access to the site from Canada Larga Road. If Canada Larga Road is used as an access road, 5 to 6 miles of road construction would be required at an approximate estimated cost of up to \$12 million dollars from Route 33 to the site boundary since a new bridge and extensive drainage improvements would be required. Regardless of the access route used onsite road improvements are still expected to be \$6-\$8 million, (Reference XIV-47).

c. Hydrology/Geology

A major portion of the drainage from this site is tributary to the Santa Clara River, an important drinking water and agricultural water source. A small portion of the southwest part of the property which drains the Ventura River (which is not considered a drinking water source). The land owner is currently using water from a spring outside the disposal area, because on-site source yield very hard water. A small stream runs down the canyon on the west side and joins with a large stream in Aliso Canyon. The drainage water flow in Aliso Canyon is 1,800 cubic feet/second. In addition, borrow areas could be established at the site to provide adequate cover material. The soil in the bottom of the main canyon is alluvium. However, the texture of soil in other canyon areas indicates presence of somewhat less permeable soil on the order of 10^{-6} . The stream in the main canyon as well as any springs would need to be tiled and diverted to a retention pond, or diverted around the landfill and directly to the stream.

d. Flora and Fauna

No endangered species were encountered at the site. However, there are large oaks, willows, and grassland habitats at the site. The area surrounding the site is well suited to supporting many types of wildlife.

e. Land Use

The number of houses from the freeway to the site averages nine per mile. The majority of which are located along Wells Road. In addition, there are two apartment houses located adjacent to Wells Road. This site is approximately 9.1 miles from the nearest Fire Protection Service located at Telephone Road and Montgomery Avenue.

The access route passes through several properties under Land Conservation Act Contracts. A portion of the access road lies within areas designated Agricultural on the County's Open Space Element.

The site itself is not visible from surrounding areas and is 2 miles from the nearest property owner and 4 miles from the nearest residential development located at South View Circle. There are no schools along the access road from Wells Road to Foothill Road to Aliso Canyon Road. However, there are two schools using the alternate access Route 126 to Briggs Road to Foothill Road to Aliso Canyon Road.

The Aliso Canyon Road bisects Limoneria and Hobson-Smith properties. There are citru and avacado orchards along a portion of the access route. Affected

property owners have expressed concern of adverse impacts of refuse truck traffic on agricultural operations. The possibility of infestation of avocado root rot has been noted.

The Aliso Canyon-Willoughby Road site is approximately 16.6 miles from the proposed transfer station and is the farthest site from the proposed transfer station of all the sites evaluated (refer to Chapter XIII).

f. Aliso Canyon-Willoughby Road Site Evaluation Summary

Due to concerns of potential adverse impacts on neighboring citrus and avocado orchards, and possible threat to the Santa Clara River (a major drinking water source), Aliso Canyon was not selected as a tentative site. A summary of positive and negative features follows:

(1) Favorable Site Characteristics

- o This site is the second largest of all the sites rated and has approximately 950 acres of usable land.
- o This site's life is estimated to be at least 35 years and could possibly be as long as 49 years.
- o In general, soils within the canyon area have good permeability and it is estimated that there is enough soil available within or adjacent to the canyon to provide the needed cover material.
- o Available information indicates that there is no known usable groundwater (drinking water) underlying the site. The Pico formation underlying the site is designated as saline or non-water bearing sediment.
- o This site is located approximately 3,000 feet south of the Sulfur Mountain fault which is known to be active (Holocene).
- o This site is well isolated, 4 miles from the nearest residential development and approximately 5.2 miles from the City of Ventura.

(2) Potential Site Limitations

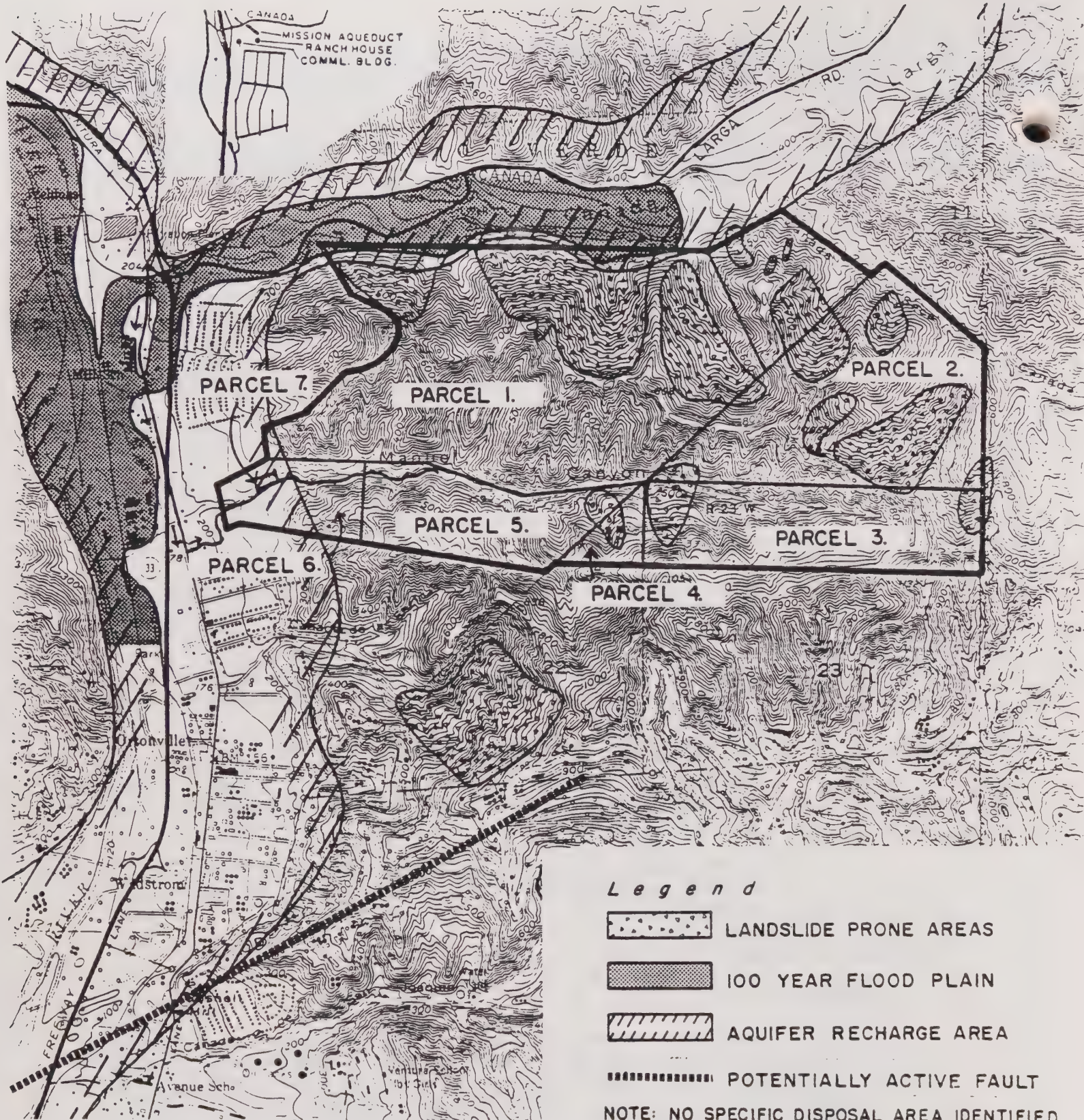
- o A major portion of this site's drainage is tributary to the Santa Clara River which is a source of freshwater. Therefore, this site would require close monitoring and a cut-off structure to contain any horizontal migration. A failure of on-site mitigation measures could lead to adverse impacts on the Santa Clara River.
- o The access road from the 126 Freeway to Wells Road to Foothill Road to Aliso Canyon Road passes by two apartment complexes, residential homes and commercial establishments. The alternate access via Route 126 to Briggs Road to Foothill Road to Aliso Canyon Road passes two schools.

- o The access road from Foothill Road to the site (Aliso Canyon Road) passes several homes, citrus and avocado orchards, and ranch lands.
- o This canyon has a potential for large amounts of surface water flow which will need to be controlled during inclement weather considering its large drainage area.
- o Approximately 5 to 6 miles of road construction, widening and repair including drainage improvements would be required to establish disposal operations at this site. A portion of the access road beginning at the end of the County-maintained portion of Aliso Canyon Road will require extensive upgrading.
- o The cost of providing access to the site is estimated to be 8 million dollars using the Aliso Canyon Road access or 12 million dollars using Canada Larga Road access. It is estimated an addition 6-8 million dollars would be required for onsite road improvements.
- o This site is approximately 9.1 miles to the nearest Fire Protection Services located at Telephone Road and Montgomery Avenue. This site is the second most distant site from Fire Protection Services of all the sites rated.
- o There is limited areas of level ground for landfarming operations. Extensive grading or use of the hillside disposal method for oil field waste may be needed.
- o Small to moderate landslides within the area may require corrective measures or removal. This material may be used as cover material.
- o This site is approximately 16.6 miles from the proposed transfer station and is therefore the most distant site from the proposed transfer station of all the sites evaluated (refer to Chapter XIII).
- o Truck traffic from Camarillo to the site may be routed through Saticoy on Route 118 (Refer to Environmental Impact Report Volume III).





3. Manuel Canyon

a. General

Manuel Canyon is a narrow "V" shaped canyon approximately 150 acres in size and located 3,000 feet south of Canada Larga Road near Ventura Avenue (A.P. Nos. 35-230-10, 11, 15; 64-010-04, 12 and 63-110-06) (Figure XIV-7). It is improbable that this site would be able to accommodate landfarming or refuse disposal operations considering the lack of a right-of-way and access onto the site. Manuel Canyon had a composite score of 499. Considering the small amount of disposal capacity available at the site (9 years or less) it does not appear to be profitable to establish disposal operations at this site. The site was removed from consideration at the Draft CoSWMP stage.



Legend

-  LANDSLIDE PRONE AREAS
-  100 YEAR FLOOD PLAIN
-  AQUIFER RECHARGE AREA
-  POTENTIALLY ACTIVE FAULT

NOTE: NO SPECIFIC DISPOSAL AREA IDENTIFIED WITHIN THE CANYON.

SOURCE:
Ventura County
Resource
Management
Agency
Planning
Division
1983

MANUEL CANYON

Figure XIV-7


1"=200'

b. Roads

The (off-site) access to Manuel Canyon is via the Route 33 Freeway to Canada Larga Road to Ventura Avenue. There is no on-site access road or right-of-way at the Manuel Canyon site. Access is obtained over property currently developed and used for growing citrus. An access road would have to be constructed and right-of-way obtained from multiple landowners. Three to four miles of access road would need to be improved or constructed and would cost approximately \$3-4 million dollars. Improvements such as constructing a turn lane and addition of a traffic signal would need to be made to Ventura Avenue costing approximately \$100,000 or more. Since the major access to Manuel Canyon would be the Route 33 exit at Canada Larga Road, trucks going to a site at Manuel Canyon would leave at a point approximately 200 feet west of the Mission Aqueduct, which has been purchased by the County for use as a park. Trucks would not pass directly by the aqueduct but vibrations from truck traffic may affect the aqueduct.

c. Flora and Fauna

There are oak trees within the canyon and native grasses on the hillside. However, no endangered species were observed.

d. Hydrology/Geology

According to available information there is no known usable groundwater (water usable for drinking water purposes) underlying the site. The soils at the site are predominantly shaly loams and silty clay loams. The drainage water flow in Manuel Canyon is 830 cubic feet/second.

e. Planning

Manuel Canyon is approximately 1.5 miles from the nearest fire protection services located at Ventura Avenue and Canada Larga Road. The site is located 2.5 miles from the Red Mountain Fault which is designated as an active fault and is approximately 500 feet from the nearest residential tract which is located on the south side near the mouth of the canyon. This site is located in an area with a land use designation of open space/urban reserve and could be affected by future encroachment. In addition, this site is adjacent to land zoned as

Residential. This site is visible from surrounding areas since it is not screened from view in the direction of nearby tracts. Only one stop sign is present which is at the Route 33 off-ramp and Canada Larga Road. This site is a steep narrow "V" shaped canyon, and could, at best, provide only an estimated 150 acres of land for disposal. The canyon is 4,000 feet long and at its widest point is 500 feet wide and is too narrow for trucks to traverse and still have room for disposal operations. The estimated life span of 9 years or less would not appear to be economical for establishing disposal operations at this site.

The Manuel Canyon site is approximately 8.6 miles from the proposed transfer station and is the third closest site to the proposed transfer station of all the sites evaluated (refer to Chapter XIII).

f. Manuel Canyon Site Evaluation Summary

The site does not appear to be a viable location for a municipal waste disposal site based on its lack of a deeded improved access, and its location within an

area designated open space/urban reserve. Most important, the steep canyon is too narrow and small for conducting long-term disposal operations. An analysis of favorable site characteristics and potential site limitations follows:

(1) Favorable Site Characteristics

- o This site is not known to overlie usable groundwater (water usable for drinking water purposes).
- o This site is located close to a major generator of refuse.
- o This site is located approximately 0.6 miles from the proposed transfer station (refer to Chapter XIII).

(2) Potential Site Limitations

- o This canyon does not provide adequate room for maneuvering trucks and conducting disposal operations.
- o This site is owned by multiple landowners which would have to agree to its future use.
- o There is no access road to the site and no established right-of-way.
- o The nearest residential development is located approximately 0.2 miles from the site at Norway Drive.
- o This site is located adjacent to land zoned by the city as residential and is within 500 feet of the nearest house located on the south side near the entrance to the canyon.
- o This site is located 0.75 miles south of the Mission Aqueduct. Vehicles travelling to the site using the Route 33 access to Canada Larga Road to Ventura Avenue would pass within 200 feet of the aqueduct. Vibrations from trucks and other vehicles may affect the structure.
- o Manuel Canyon is adjacent to Ventura City limits and is within its Sphere of Influence. This site is located on land having a land use designation of open space/urban reserve. Therefore, encroachment from surrounding areas may limit any potential for establishing disposal site operations within Manuel Canyon.
- o This site does not have enough usable land area (150 acres) to provide a long-term municipal waste disposal site.

4. Hall Canyon

a. General

This site is located 1.1 miles to the northeast of the City of Ventura and is comprised of approximately 89 usable acres (A.P. Nos. 64-080-02 (part); 64-090-04, 03 (part); and 64-160-13, 16, 17 (part))

(Figure XIV-6). This site had the highest (i.e., worst) composite score (563) and was thus the lowest ranked of the sites evaluated. This site drains large areas to the north and east which would be extremely difficult to constrain. In addition, the main access route to the site is Highway 101 to Seaward Avenue, to Poli Street. This access would require truck traffic to pass through densely populated residential areas and by a high school and day care nursery. This site lies within the Ventura City Sphere of Influence and is designated open space/urban reserve and therefore is in an area of potential future encroachment. The site size is not large enough for a municipal waste refuse disposal site. During the on-site visit this site was found to contain a critical factor in that movement of landslides adjacent to the site access roads would not provide all weather access to the site. Therefore, this site was excluded from further consideration at the end of the site rating process and was not included as a tentative site in the Draft CoSWMP.

b. Roads

The major access route to Hall Canyon is from the 101 Freeway to Seaward, left onto Poli Street, and then right to Hall Canyon Road. Along the access road, there is a mixture of commercial and residential areas. There are approximately 30 houses per mile along the access road with many intersections such as Thompson Boulevard, Main Street and Poli Street to negotiate.

This site's access road requires trucks to go directly past the eastern portion of Ventura Senior High School and a nearby day care nursery, both of which cannot be avoided since this is the only paved access connecting the southern portion of Hall Canyon to Route 101. Trucks would have to travel approximately 3-3/4 miles through residential and commercial areas. There is a 4 lane asphalt road from Route 101 along Seaward and at Poli Street the road becomes 1½ lanes. Roads in Hall Canyon are 1½-2 lanes wide and range in grade from approximately 3 percent to 5 percent. At the branch of the east and west canyons, the road becomes steeper and is approximately 5 percent or more in grade. The roads in Hall Canyon connect with steep, winding, roads leading to School Canyon (Canada de San Joaquin) located to the west. However, these roads are over 5 percent grade and have large landslides located adjacent to the roads.






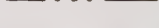
Since there is extensive oil drilling in the canyon, disposal operations would have to be limited to the mid portion of the canyon below the east and west forks in order to avoid encroachment on current oil production areas.

c. Hydrology/Geology

It was determined that the best soil in Hall Canyon is mudpit shale which comprises approximately a 3/4 mile wide strip starting at the east and west canyon fork and continuing south approximately one third




Legend

-  LANDSLIDES
-  AQUIFER RECHARGE AREA
-  PARCEL BOUNDARY
-  PROPOSED DISPOSAL AREA (APPROXIMATE LOCATION)
-  SPHERE BOUNDARY
-  CITY LIMITS

SOURCE:
Ventura County
Resource
Management
Agency
Planning
Division
1983

HALL CANYON

Figure XIV-3


1"=2000'

of the way down the main portion of the canyon. However, the only area available for disposal would be located a mile below the branch in the main portion of the canyon away from the mudpit shale in the more permeable San Pedro formation. This canyon is approximately 89 acres in size. Other canyon areas identified were small and steep and would not provide the required land area or capacity. An oil company is currently operating a small land farm in the east fork of the canyon. Considering water resources, Hall Canyon appears of limited feasibility in establishing a solid waste disposal facility. The most desirable area in Hall Canyon would be where the southward dipping Santa Barbara geologic formation trends across the canyon. This formation is primarily composed of low permeability clays which would virtually eliminate vertical migration of leachate. However, due to the large surface water flows moving through the canyon during heavy rains, surface run-off from a large disposal operation would be difficult to control and could infiltrate down-canyon in the more permeable San Pedro formation and would need to be closely monitored.

d. Flora and Fauna

A major portion of Hall Canyon contains coastal sage and scrub oak. This is fairly common in the area and no endangered species were noted.

e. Planning

This site is approximately 1.1 miles from the Ventura City limits and is within its Sphere of Influence (25 points). This site is located in an area with a land use designation of open space/urban reserve and could be affected by future encroachment. One apartment complex is located along the access route on Seaward. Established residential developments are located approximately 1.3 miles from the site. A home is located near the canyon entrance approximately two miles from the proposed disposal area. The site is hidden from view. In addition, there are 5 stop signs and traffic signals from the 101 Freeway to the site.

Access road visibility is poor at the bend in Hall Canyon Road. Prior to entering the main canyon, visibility is less than 300 feet.

This site is approximately 4 miles from the nearest Fire Protection Services located at Main Street and Seaward Avenue. Potential borrow areas would provide adequate cover material. However, it is estimated that this 89 acre site would only provide 5 years of service life. Therefore, this site does not provide enough capacity for a combination oil field waste and refuse disposal site.

The Hall Canyon Site is approximately 5.3 miles from the proposed transfer station and is the closest of all the sites evaluated to the transfer station (refer to Chapter XIII).

f. Hall Canyon Site Evaluation Summary

Based on the site visit to Hall Canyon and available information used to rate the Hall Canyon site, this site does not appear to be a viable location for establishing a municipal waste disposal site. In addition, massive landslides are present in the eastern fork of the canyon but not within the disposal area evaluated. These landslides which are located along access roads to Hall Canyon would not provide

adequate all weather access to the site. Therefore, the Hall Canyon site was excluded from further consideration. Favorable site characteristics appear to be out weighted by potential site development limitations as follows:

(1) Favorable Site Characteristics

- o The presence of mud pit shale which is a low permeability soil if excavated could provide cover material for a site located in the more permeable San Pedro formation.
- o This site is approximately 5.3 miles from the proposed transfer station and is the closest of all the sites to the proposed transfer station (refer to Chapter XIII).

(2) Potential Site Limitations

- o The Hall Canyon site had the worst composite score (547) of all the sites rated.
- o During the site visit, areas along the site access routes were observed and identified as areas where landslides had occurred blocking access to the site. Since these landslides would prevent all weather access to the site this situation was determined to contain a critical factor. The Hall Canyon site was excluded from further consideration at this point.
- o There are approximately 30 homes per mile along the access route to Hall Canyon from the 101 Freeway to Seaward to Poli Street to the Hall Canyon Road. The Hall Canyon site had the highest average number of homes along the access route of all the sites evaluated.
- o The Hall Canyon site lies within the Ventura City Sphere of Influence and is on land with a land use designation of open space/urban reserve, therefore is in an area of potential future encroachment.
- o Hall Canyon drains a large area to the north and east and it would, therefore, be extremely costly and difficult to control water flows through the Canyon.
- o The Hall Canyon site does not provide enough usable land area (89 acres of usable land) to accommodate a municipal waste disposal site.
- o The estimated life of the Hall Canyon site is approximately 5 years and would, therefore, not appear to be economically feasible for establishing a municipal waste disposal site.

14.6 FINDINGS

- o Of the 38 potential landfill sites considered, nine lie outside the western watershed.
- o Of the 29 potential sites considered within the western watershed, 23 contain critical factors on-site which would require mitigation, perhaps be controversial, and would involve a level of risk should mitigation fail.
- o With the exception of Holocene Faults and direct contact with usable groundwater, on-site critical features can be technically mitigated, albeit at added costs and with an added level of risk.

14.7 IMPLEMENTATION ACTION

- o Two tentative municipal waste landfill sites in the western watershed are identified as desirable locations for such a facility:
 - Hammond Canyon
 - Weldon Canyon
- o It is recommended that additional tentative landfill sites be considered for inclusion in the CoSWMP through the Plan Amendment process, if all of the following criteria can be demonstrated by the applicant:
 - On-site "critical factors" can be demonstrated to be fully mitigable;
 - Subchapter 15 (Water Quality) and all other State and Federal requirements can be met at the site;
 - The cost of needed mitigation required can be shown to be economically reasonable.
 - By action of the Board of Supervisors on October 30, 1984, specific provision is made for a scheduled action on a Plan amendment within 18 months of Plan adoption by the California Waste Management Board. This amendment to the Plan would be to consider inclusion of Santa Clara River landfill sites, if, as noted above, the site proponent can demonstrate that on-and-off-site critical factors can be fully mitigated at a reasonable cost.

14.8 DEFINITIONS

Aquifer - A geologic formation, group of formations, or portions of a formation capable of yielding usable quantities of ground water to wells or springs.

Confined Ground water - A body of ground water overlain by material sufficiently impervious to sever free hydraulic connection with overlying ground water except at the intake (Ground water by Tolman 1937, pg. 558).

Critical Factors - Critical factors are physical features as specifically defined within Chapter XIV Section 14.4.1.2 and are considered to be too

costly to mitigate and therefore required sites be excluded from the selection process. Critical factors related to this specific CoSWMP update may be re-examined as technology improves and if recommended sites fail to be developed.

Disposal Area - That portion of a disposal site or land parcel at which waste is discharged to land for purpose of disposal and at which waste will remain following site closure.

100 Year Flood Plain - 100 Year Flood Plain describes an area in which a 1% or a greater chance of flooding occurs in any one year.

Gravity Water - Gravity or vadose water is water derived from stream flow and drainage ditches, as distinguished from pumped water, and water furnished by a water table in contrast to water produced from a confined water well (Ground water by Tolman, 1937, pg. 559).

Ground Water - Ground water is water (below the land surface) in the zone of saturation (Meinzer, USGS, WSP 494 P 37 1923).

Liquefaction - The sudden large decrease of the shearing resistance of a cohesionless soil, caused by a collapse of the structure by shock or strain, and associated with a sudden but temporary increase of the pore fluid pressure (ASCE, 1958, term 205). It involves a temporary transformation of the material into a fluid mass.

Perched Ground Water - Ground water separated from an underlying body of ground water by unsaturated rock.

Mitigation - Mitigation includes: avoiding the impacts, minimizing impacts, rectifying the impact, reducing or eliminating the impact over time by preservation or maintenance operations during life of the action.

Recharge Area - A region supplying water to a confined aquifer (Ground water Hydrology, by D.K. Todd, 1960 p. 29).

Spring - A place where, without the agency of man, water flows from a rock or soil upon the land or into a body of surface water (Meinzer, USGS WSP 494, p. 48, 1923).

Spring-fed Intermittent Stream - A spring-fed intermittent stream, or stretch of a stream, is one that flows only at certain times when it receives water from springs (Meinzer, O.E., USGS WSP 494, p. 57, 1923).

Surface Water - Is water which rests on the surface of the lithosphere (ground) (Meinzer, USGS, WSP 494 1923).

Vadose Water - Water in excess of pellicular water seeping toward the water table (Ground water by Tollman, 1937, pg. 554).

Project Constraints - Project constraints relate to current needs and can be modified to fit these changing needs. Therefore project constraints will be modified in future CoSWMP updates in order to reflect needs identified during the update.

CHAPTER XV - PERMIT PROCESSING PROCEDURES

15.1 INTRODUCTION

State law requires that a waste management project be in conformance with the County's Solid Waste Management Plan (CoSWMP) before a permit can be issued. The CoSWMP acts as a countywide siting plan and provides policy statements on waste management issues. Inclusion of a particular waste management project within the CoSWMP (either as part of its tri-annual update or as an amendment) requires the approval of the majority of the ten (10) cities with a majority of the incorporated population within the County. Once the County Board of Supervisors approves the Plan, the California Waste Management Board must also approve it.

A complete listing of the permits required by the County and State for waste management projects is provided in Table XV-1. Table XV-1 also lists several Federal permits that may be required. Prospective applicants should contact the U.S. Environmental Protection Agency and U.S Department of Transportation for a more complete listing of Federal permits and requirements relative to waste management projects.

Prerequisite information is also provided in Table XV-1. This information distinguishes between permits required for treatment processes and disposal projects, hazardous versus non-hazardous wastestream projects and ministerial versus discretionary decision-making. In addition, Table XV-1 indicates which permits may be processed concurrently and which permits must be processed sequentially. Whether or not a permit or prerequisite is applicable to a particular project depends upon the project's nature and location. Any concerns or questions may be directed to the various government representatives listed. The County Planning Division should be contacted during the conceptual stage of project development.

15.2 PERMITS

A brief description of the major permits required for establishing a solid waste landfill site, and their function, is provided below:

A. City Permits

- o The cities of Ventura County vary in their requirements for landfill permits. Some cities' zoning ordinances do not provide for such uses while others require a determination by the Planning Commission as to whether an application may be filed, while still others require a special or conditional use permit process. The City of Oxnard allows permits for landfills in the M-2 (Heavy Industrial) and CR (Community Reserve) zones. Presently, the City of Simi Valley allows landfill permits in the RA (Rural Agriculture), RE (Rural Exclusive), and R-1 (Residential) zones. However, recodification of the Zoning Ordinance is underway in Simi Valley, which may alter their requirements. The specific city requirements are indicated in Table XV-2.

TABLE XV-1

REQUIRED PERMITS AND PREREQUISITE INFORMATION

PERMITS	CONTACT PARTIES	PROCESS TIMING ⁽¹⁾	CONCURRENT OR SEQUENTIAL PROCESS ⁽²⁾⁽³⁾	PRE-SUBMITTAL MEETING REQUIRED?
COUNTY PLANNING DIVISION Conditional Use Permit COASTAL DEVELOPMENT PERMIT (W/IN COASTAL ZONE)	(805) 654-2493 808 S. Victoria Ave. Ventura, CA 93009	ROBT. LAUGHLIN 306-430 days 1-10 DAYS	--	Yes
COUNTY ENVIRONMENTAL HEALTH DIVISION Solid Waste Facility Permit (non-hazardous waste stream) Well Permit	808 S. Victoria Ave. Ventura, CA 93009	LES STUBER 120 days 7-10 days	Concurrent staff processing; however its approval must follow issuance of CUP Concurrent	Yes No
COUNTY BUILDING & SAFETY DIVISION Uniform Building Permit	808 S. Victoria Ave. Ventura, CA 93009	CIMMY RANCE Variable	Sequential	No
COUNTY AIR POLLUTION CONTROL DIST. Authority to Construct Permit to Operate	808 S. Victoria Ave. Ventura, CA 93009	DICK JOHNSON 60-120 days (hazardous) 45 days (non-hazardous) 10-45 days	Concurrent Sequential to issuance of Authority to Construct	Yes Yes
COUNTY FIRE PROTECTION DISTRICT Uniform Fire Code Permit	275 E. Pleasant Valley Road Camarillo, CA	PAUL ZAMAZANUK 30 days	Concurrent	No
COUNTY PUBLIC WORKS AGENCY Encroachment Permit Grading Permit Motorcourse Permit	808 S. Victoria Ave. Ventura, CA 93009 (805) 654-2046 (805) 654-2059 (805) 654-2083	Ken Gordon John Crowley Bill Frank 2 days 2 days 15-45 days	Concurrent Concurrent Concurrent	No No No
REGIONAL WATER QUALITY CONTROL BOARD Waste Discharge Requirement	(213) 620-4488 107 S. Broadway, Room 4027 Los Angeles, CA 90012	Hank Yocum 120-180 days	Concurrent staff processing; Yes however its approval must follow issuance of CUP	Yes
STATE DEPT. OF HEALTH SERVICES Hazardous Waste Facility Permit (hazardous waste stream)	(213) 620-2380 107 S. Broadway, Room 7128 Los Angeles, CA 90012	John Minton 180 days	Concurrent staff processing; Yes however its approval must follow issuance of CUP	Yes
STATE DEPARTMENT OF FISH AND GAME Agreement	(213) 698-6117 350 Golden Shore Long Beach, CA 90802	John Baxter 30 days	Concurrent	No
STATE DIVISION OF OIL AND GAS Injection Well Permit	(805) 525-2108 146 S. Ojai St., P.O. Box 67 Santa Paula, CA 93060	Harvey Deach 10-30 days	Concurrent	No
STATE DEPARTMENT OF FORESTRY Rubbish Dump Permit (for areas within, adjacent or affecting forest resources)	(916) 446-9999 1416 Ninth St., 15th Floor Sacramento, CA 95814	10-45 days	Concurrent	No
U.S. ENVIRONMENTAL PROTECTION AGENCY (hazardous waste stream) New Source Permit Prevention of Serious Deter. Permit National Emission Standard for Hazardous Pollutant Permit	(415) 974-8162 Toxic and Waste Management Program 7-2 215 Fremont Street San Francisco, CA 94105	180 days to 1+ year	Concurrent Concurrent Concurrent	Yes Yes Yes

TABLE XV-1 (CONTINUED)

REQUIRED PERMITS AND PREREQUISITE INFORMATION

PERMITS	PLAN CONSISTENCY FINDING REQUIRED?	OTHER PREREQUISITES	SPECIFIC DATA REQUIREMENTS	APPLICATION REQUIRED	FORMAL APPLICATION COMPLETENESS FINDING
COUNTY PLANNING DIVISION Conditional Use Permit	County Solid Waste Management Plan General Plan	Zoning Consistency	Yes	Yes	Yes (30 days)
COUNTY ENVIRONMENTAL HEALTH DIVISION Solid Waste Facility Permit (non-hazardous waste stream) Well Permit	County Solid Waste Management Plan --	Conditional Use Permit Waste Discharge Requirements as a part. --	Yes Yes	Yes Yes	Yes (5 days) No
COUNTY BUILDING AND SAFETY DIVISION Uniform Building Permit	--	Zoning Clearance	Yes	Yes	No
COUNTY AIR POLLUTION CONTROL DIST. Authority to Construct Permit to Operate	Air Quality Management Plan	-- Authority to Construct	Yes Yes	Yes Yes	Yes (30 days) Yes (30 days)
COUNTY FIRE PROTECTION DISTRICT Uniform Fire Code Permit	--	--	Yes	Yes	No
COUNTY PUBLIC WORKS AGENCY Encroachment Permit Grading Permit Watercourse Permit	-- -- --	-- -- --	Yes Yes Yes	Yes Yes Yes	No No No
CALIFORNIA COASTAL COMMISSION Coastal Development Permit (Coastal Zone location or use of coastal resources)	Coastal Plan	All other permits	Yes	Yes	Yes (30 days)
REGIONAL WATER QUALITY CONTROL BOARD Waste Discharge Requirement	Water Quality Basin Plan	--	Yes	Yes	Yes (30 days)
STATE DEPT. OF HEALTH SERVICES Hazardous Waste Facility Permit (hazardous waste stream)	(4)	Waste Discharge Requirements as a part	Yes	Yes	Yes (30 days)
STATE DEPARTMENT OF FISH AND GAME Agreement	--	--	Yes	No	No
STATE DIVISION OF OIL AND GAS Injection Well Permit	--	--	Yes	Yes	No
STATE DEPARTMENT OF FORESTRY Rubbish Dump Permit (for areas within, adjacent or affecting forest resources)	--	--	No	Yes	No
U.S. ENVIRONMENTAL PROTECTION AGENCY (hazardous waste stream) New Source Permit Prevention of Serious. Deter. Permit National Emission Standard for Hazardous Pollutant Permit	-- -- --	Check with EPA Check with EPA Check with EPA	Yes Yes Yes	Yes Yes Yes	Yes Yes Yes Check with EPA regarding timing

TABLE XV-1 (CONTINUED)

REQUIRED PERMITS AND PREREQUISITE INFORMATION

PERMITS	FILING FEE	SITE INSPECTION REQUIRED	ENVIRONMENTAL ASSESSMENT REQUIRED	DRAFT PERMIT REVIEWED STATEWIDE
COUNTY PLANNING DIVISION Conditional Use Permit	\$3000 deposit plus staff costs (la. open ended)	Yes	Yes	Yes (Development Advisory Committee)
COUNTY ENVIRONMENTAL HEALTH DIVISION Solid Waste Facility Permit (non-hazardous waste stream)	\$500 maximum	Yes	Yes	Yes
Well Permit	\$400 per well	Maybe	No	No
COUNTY BUILDING AND SAFETY DIVISION Uniform Building Permit	Variable	Yes	No	No
COUNTY AIR POLLUTION CONTROL DISTRICT Authority to Construct	\$300-\$600 plus staff costs	Maybe	No (An air quality impact analysis is performed under Authority process)	No
Permit to Operate	Staff costs	Yes	No	No
COUNTY FIRE PROTECTION DISTRICT Uniform Fire Code Permit	Variable	Yes	No	No
COUNTY PUBLIC WORKS AGENCY Encroachment Permit	\$35	Maybe	No	No
Grading Permit	Sliding fee for plan check	Yes	No	No
Watercourse Permit	\$35 plus staff costs	Yes	No	No
REGIONAL WATER QUALITY CONTROL BOARD Waste Discharge Requirement	\$1000	Yes	Yes	Yes
STATE DEPARTMENT OF HEALTH SERVICES Hazardous Waste Facility Permit (hazardous waste stream)	None	Yes	Yes	Yes
STATE DEPARTMENT OF FISH AND GAME Agreement	None	Yes	No (A biological and water resource analysis is required)	Yes
STATE DIVISION OF OIL AND GAS Injection Well Permit	None	Yes	No	No
STATE DEPARTMENT OF FORESTRY Rubbish Dump Permit (for areas within, adjacent or affecting forest resources)	None	No	No	No
U.S. ENVIRONMENTAL PROTECTION AGENCY (hazardous waste stream)				
New Source Permit	Check with EPA	Yes	Yes	Yes
Prevention of Serious. Deter. Permit	Check with EPA	Maybe	Yes	Yes
National Emission Standard for Hazardous Pollutant Permit	Check with EPA	Maybe	Yes	Yes

TABLE XV-1 (CONTINUED)

REQUIRED PERMITS AND PREREQUISITE INFORMATION

PERMITS	MINISTERIAL	LEVEL OF DECISION DIRECTOR	MAKING POLICY BOARD	APPEALABLE	LIFE OF PERMITS
COUNTY PLANNING DIVISION Conditional Use Permit			Board of Supervisors (5)	No	Variable
COUNTY ENVIRONMENTAL HEALTH DIVISION Solid Waste Facility Permit (non- hazardous waste stream)		County Environmental Health Officer	(with concurrence of State Solid Waste Management Board)	Board of Supervisors & State Solid Waste Mgmt. Bd.	County review every 5 years
Well Permit				No	Life of Well
COUNTY BUILDING AND SAFETY DIVISION Uniform Building Permit	Yes			No	Life of Structure
COUNTY AIR POLLUTION CONTROL DISTRICT Authority to Construct		County Air Pollution Control Officer		APC Hearing Board	--
Permit to Operate				APC Hearing Board	1-3 years
COUNTY FIRE PROTECTION DISTRICT Uniform Fire Code Permit		County Fire Chief		No	Variable
COUNTY PUBLIC WORKS AGENCY Encroachment Permit	Yes	(some types of encroachment are desirable)		Board of Supervisors	--
Grading Permit	Yes			Grading Appeal Board	--
Watercourse Permit	Yes			Board of Supervisors	Variable
CALIFORNIA COASTAL COMMISSION Coastal Development Permit (Coastal Zone location or use of coastal resources)			Coastal Commission	No	In perpetuity
REGIONAL WATER QUALITY CONTROL BOARD Waste Discharge Requirement			Regional Water Quality Control Board	State Water Resources Control Board	No expiration; how- ever the require- ments are modified upon CUP modifica- tion or extension
STATE DEPARTMENT OF HEALTH SERVICES Hazardous Waste Facility Permit (hazardous waste stream)		State Health Director		No	State Health review every 5 years
STATE DEPARTMENT OF FISH AND GAME Agreement		Regional Manager		State Fish and Game Commission	No expiration
STATE DIVISION OF OIL AND GAS Injection Well Permit	Yes			Director of State Dept. of Conservation	Life of well
STATE DEPARTMENT OF FORESTRY Rubbish Dump Permit (for areas within, adjacent or affecting forest resources)	Yes			No	No expiration
U.S. ENVIRONMENTAL PROTECTION AGENCY (hazardous waste stream)					
New Source Permit		Regional Director		Check with EPA	Check with EPA
Prevention of Serious Deter. Permit					
National Emission Standard for Hazardous Pollutant Permit					

TABLE XV-1 (CONTINUED)

REQUIRED PERMITS AND PREREQUISITE INFORMATION

PERMITS	WHEN IS A PERMIT REQUIRED				IF OPTIONAL, UNDER WHAT CONDITIONS?	CONDITIONS OR STANDARDS IMPOSED?		ARE PLANS REQUIRED?	
	HAZARDOUS Site	HAZARDOUS Process	NON-HAZARDOUS Site	NON-HAZARDOUS Process		Prior to Start Up	During Operation	Monitoring	Closure
COUNTY PLANNING DIVISION Conditional Use Permit	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes
COUNTY ENVIRONMENTAL HEALTH DIVISION Solid Waste Facility Permit (non- hazardous waste stream)	No	No	Yes	Yes		Yes	Yes	Yes	Yes
Well Permit	Yes	Yes	Yes	Yes		Yes	No	--	--
COUNTY BUILDING AND SAFETY DIVISION Uniform Building Permit	Yes	Yes	Yes	Yes		--	--	--	--
COUNTY AIR POLLUTION CONTROL DISTRICT Authority to Construct	Yes	Yes	Yes	Yes		Yes	No	--	--
Permit to Operate	Yes	Yes	Yes	Yes		Yes	Yes	--	--
COUNTY FIRE PROTECTION DISTRICT Uniform Fire Code Permit	Yes	Yes	Yes	Yes		Yes	Yes	--	--
COUNTY PUBLIC WORKS AGENCY Encroachment Permit	•	No	•	No	If road access is involved	Yes	No	--	--
Grading Permit	•	•	•	•	If earth alteration is involved	Yes	No	--	--
Watercourse Permit	•	•	•	•	If the project affects a streambed	Yes	Yes	--	--
CALIFORNIA COASTAL COMMISSION Coastal Development Permit (Coastal Zone location or use of coastal resources)	•	•	•	•	If the project is located in the Coastal Zone or affects coastal resources	Yes	Yes	Yes	Yes
REGIONAL WATER QUALITY CONTROL BOARD Waste Discharge Requirement	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes
STATE DEPARTMENT OF HEALTH SERVICES Hazardous Waste Facility Permit (hazardous waste stream)	Yes	Yes	No	No		Yes	Yes	Yes	Yes
STATE DEPARTMENT OF FISH AND GAME Agreement	•	•	•	•	If the project affects a river, stream, or lake	Maybe	Yes	--	--
STATE DIVISION OF OIL AND GAS Injection Well Permit	•	•	•	•	If an injection well is involved	Yes	Maybe	--	--
STATE DEPARTMENT OF FORESTRY Rubbish Dump Permit (for areas within, adjacent or affecting forest resources)	•	•	•	•	If within a State Forest or potentially impacting forest resources	Maybe	Maybe	--	--
U.S. ENVIRONMENTAL PROTECTION AGENCY (hazardous waste stream)									
New Source Permit	Yes	Yes	No	No		Yes	Yes	Yes	Yes
Prevention of Serious, Deter. Permit	•	•	No	No	If the project is located in the North Half area of the County	Yes	Yes	Yes	Yes
National Emission Standard for Hazardous Pollutant Permit	Yes	Yes	No	No		Yes	Yes	Yes	Yes

FOOTNOTES TO TABLE 1

1. Process Timing follows formal finding of application completeness, and assumes optional processing conditions, such as adequate man-power and baseline information.
2. An applicant has the option of choosing to concurrently or sequentially process most local and State permits. If concurrent processing is chosen, certain applicant tradeoffs are necessary, such as providing all required technical data upfront in the pre-submittal phase.
3. An applicant considering concurrent processing should become familiar with State Health and Safety Code Section 25204.
4. An applicant for a Hazardous Waste Facility Permit should either become a part of, or become familiar with the Southern California Segment, State Hazardous Waste Siting Program. Please contact the Southern California Association of Governments at (213) 385-1000.
5. By policy of the County Board of Supervisors, all Conditional Use Permit applications for waste management projects will undergo Planning Commission deliberations. Upon conclusion of the Commission's hearing, the Planning Director will automatically appeal the project to the Board of Supervisors hearing for a final decision.

TABLE XV-2

REQUIRED CITY PERMITS AND PREREQUISITE INFORMATION

A. REQUIRED PERMITS

PERMITS	CONTACT PARTIES	PROCESS TIMING	CONCURRENT OR SEQUENTIAL PROCESS	PRE-SUBMITTAL MEETING REQUIRED
---------	--------------------	-------------------	--	--------------------------------------

CITY OF CAMARILLO

--- NOT PERMITTED ---

CITY OF FILLMORE

--- NOT PERMITTED ---

CITY OF MOORPARK

Would require approval of Conditional Use Permit approved by Planning Commission.
Contact Planning Department at 529-6864.

CITY OF OJAI

--- NOT PERMITTED ---

CITY OF OXNARD

Special Use Permit	Planning Dept.	16 weeks after EIR completed	--	Yes
Building Permit if structures are to be built	Building Dept.	Variable	Sequential	Yes
Grading Permit for site preparation or if land division is filed	Public Works Dept.	Variable	Sequential	No

CITY OF PORT HUENEME

USE NOT SPECIFIED IN ZONING CODE

CITY OF SANTA PAULA

USE NOT SPECIFIED IN ZONING CODE

Would require Planning Commission direction to allow filing of Conditional Use Permit. Contact Planning Department (805) 525-4478.

A. REQUIRED PERMITS (Continued)

CITY OF SIMI VALLEY

Special Use Permit	Planning Department	Variable	--	Yes
Building permit if structures are to be built	Building Dept.	Variable	Sequential	Yes
Grading Permit for site preparation.	Public Works Dept.	Variable	Sequential	Yes

CITY OF THOUSAND OAKS

USE NOT SPECIFIED IN ZONING CODE

CITY OF VENTURA

USE NOT SPECIFIED IN ZONING CODE

Require Planning Commission direction to allow for governmental use via Conditional Use Permit. Contact Planning Department (805) 654-7800.

Table XV-2 (Continued)

B. REQUIRED PERMITS (Continued)

PERMITS	LEVEL OF DECISION-MAKING	APPEALABLE	LIFE OF PERMIT
CITY OF MOORPARK Conditional Use Permit	Planning Commission	to City Council	Variable
CITY OF OXNARD Special Use Permit	Planning Commission	to City Council	Variable
CITY OF SIMI VALLEY Special Use Permit	Planning Commission	to City Council	Variable
CITY OF VENTURA Conditional Use Permit	Planning Commission	to City Council	Variable

C. REQUIRED PERMITS (REQUIREMENTS)

PERMITS	WHEN IS A PERMIT REQUIRED?				CONDITIONS OR DEVELOPMENT STANDARDS IMPOSED? Prior to Start Up	ARE PLANS REQUIRED? Monitor- Clo- ing sure	
	<u>HAZARDOUS</u>		<u>NON-HAZARDOUS</u>				
	Site	Process	Site	Process			
CITY OF MOORPARK Conditional Use Permit	Yes	Yes	Yes	Yes	Yes	Yes	
CITY OF OXNARD Special Use Permit	Yes	Yes	Yes	Yes	Yes	Yes	
CITY OF SIMI VALLEY Special Use Permit	Yes	Yes	Yes	Yes	Yes	Yes	
CITY OF VENTURA Conditional Use Permit	Yes	Yes	Yes	Yes	Yes	Yes	

Table XV-2 (Continued)

D. PREREQUISITE INFORMATION

PERMITTING AUTHORITY	PLAN CONSISTENCY	OTHER PRE- REQUISITES	SPECIAL DATA REQTS.	APPLICATION REQUIRED	FORMAL APPLICATION COMPLETENESS FINDINGS
CITY OF MOORPARK Conditional Use Permit	Yes	Land Use Plan Consistency	Yes	Yes	Yes (30 days)
CITY OF OXNARD Conditional Use Permit	Yes	Land Use Plan Consistency	Yes	Yes	Yes (30 days)
CITY OF SIMI VALLEY Conditional Use Permit	Yes	Land Use Plan Consistency	Yes	Yes	Yes (30 days)
CITY OF VENTURA Conditional Use Permit	Yes	Land Use Plan Consistency	Yes	Yes	Yes (30 days)

PERMITTING AUTHORITY	FILING FEE	SITE INSPECTION REQUIRED	ENVIRONMENTAL ASSESSMENT REQUIRED	DRAFT PERMIT REVIEWED STATEWIDE
CITY OF MOORPARK (Conditional Use for CUP (total Permit)	\$1,400 deposit not to exceed 15% of deposit)	Yes	Yes	Yes
CITY OF OXNARD (Special Use Permit)	\$1,060 (permit) and all EIR costs (hourly rate)	Yes	Yes	Yes
CITY OF SIMI VALLEY (Special Use over 110%; plus all Permit)	\$1,400 deposit Plans cost overruns EIR costs	Yes	Yes	Yes
CITY OF VENTURA (Conditional Use Permit)	\$185 if less than 1/4 ac. \$450 if 1/4 ac. to 4 ac. \$10/acre for over 4 acres; plus all EIR costs	Yes	Yes	Yes

Source: County Planning Division 1983

G18/389

B. County Permits

o Conditional Use Permit (CUP)

The issuance of a CUP is dependent upon a project's compatibility with existing and potential surrounding land uses, protection of environmental resources, and the preservation of health, safety and public welfare.

The County Resource Management Agency, Planning Division, processes CUP applications. Issuance of a CUP for any waste management project requires a public hearing before the County Planning Commission and Board of Supervisors, with the latter having final approval authority.

Only the following County zoning designations contain CUP provisions for waste management projects: "A-E" (Agricultural Exclusive); "R-A" (Rural Agricultural); and "O-S" (Open Space) Zones. Waste Management projects are not permitted in other zoning classifications.

o Solid Waste Facility Permit

The County Solid Waste Facility Permit is the required permit for nonhazardous waste facilities. The County Resource Management Agency, Environmental Health Division, processes the Solid Waste Facility permit application and develops a draft permit. A public hearing is held on the adequacy of the draft permit before the California Waste Management Board. Although final permit authority is vested with the County Environmental Health Officer, the final permit must reflect the policies and conditions of the California Waste Management Board.

State regulations require inclusion of the site in the CoSWMP, as a prerequisite to the issuance of a Solid Waste Facility Permit. Another related State prerequisite is conformance with the nuisance and distance provisions of State Government Code Section 66784.1.

State regulations also require that the facility must be found by the County and the State to be in conformance with the CoSWMP. In preparing its conformance finding, Board staff interprets this conformance to include:

- Consistency with State Solid Waste Management policy.
- Consistency with the goals and objectives of the CoSWMP.
- Consistency with the facilities element of the CoSWMP.
- Meeting local planning requirements (i.e., General Plan consistency, issuance of a CUP, and CEQA compliance).

o Air Pollution Control District Permits (APCD)

Two County APCD permits are required for solid waste projects: Authority to Construct, followed by a Permit to Operate. These permits implement the technical requirements, and emission allocation/offset

provisions of the County Air Quality Management Plan, New Source Review Rule, and other local and State air quality regulations. The County Air Pollution Control Officer is responsible for issuance of these permits. No public hearing is required, unless the APC Officer's decision is appealed to the County APC Hearing Board.

C. State Permits

o Coastal Development Permit

A Coastal Development Permit (CDP) is required for all waste management projects located within the California Coastal Zone. This permit implements the policies of the California Coastal Plan and the Local Coastal Plan. The CDP is administered by County Planning.

o Regional Water Quality Control Board Waste Discharge Requirements

The Regional Water Quality Control Board governs the issuance of Waste Discharge Requirements for solid waste projects, and are subject to a public hearing before the Regional Board. The requirements implement the State Water Basin Plan for Ventura County, as well as various development standards. The issuance of the requirements are dependent upon a project site's demonstrated physical containment features in relation to water resources (i.e., geologic and hydrogeologic conditions). Given their major role in water quality protection, the requirements are usually a prerequisite to the Solid Waste Facility Permit, Hazardous Waste Facility Permit, and Coastal Development Permit.

o Hazardous Waste Facility Permit

The Hazardous Waste Facility Permit is required for the operation of hazardous waste facilities. The State Department of Health Services, Hazardous Waste Management Branch, governs this permit. A public hearing is held by the Department on the draft permit and the State Health Director is vested with final permit approval authority.

Prospective applicants should note that an intensive chemical analysis of waste stream materials is usually required when it is unclear whether the permit is required. More stringent development standards are applicable if this permit is required. Specific permit conditions may include on-, and off-site land use restrictions, substantial liability requirements, long-term post closure requirements, continuous waste stream analysis, safety and contingency measures related to toxic materials exposure, etc. Furthermore, major State and Federal policy issues may be applicable, including demonstration of regional need, centralized regional location, best available technology, etc.

D. Federal Permits

The U.S. Environmental Protection Agency governs the issuance of certain permits for landfill sites, if the site will accept hazardous wastes. These permits include the New Source permit and the National Emission Standard for Hazardous Pollutant Permit. If a proposed site is located in

the North Half of Ventura County, a Prevention of Serious Deterioration Permit is required. This is because the North Half has been designated as an airshed which is to be protected from any deterioration of its existing air quality. The Federal permit process is not subject to State law governing time limits for processing.

15.3 ENVIRONMENTAL ASSESSMENT

The California Environmental Quality Act (CEQA) requires that an environmental assessment be conducted for projects prior to most local and State permit decisions. The environmental assessment is under the jurisdiction of the County Resource Management Agency, Planning Division, and is implemented as part of the administrative processing of the County CUP application.

The County is responsible for administering the environmental assessment. If an EIR is required, the document is usually prepared by a private consultant under contract to the County. The applicant must pay all EIR costs, including consultant and staff charges.

The County's environmental assessment serves as the required CEQA assessment for State permits. Therefore, if an EIR is required, it can partially, if not wholly, satisfy the information and data needs of the local and State permits noted. For example, a substantial amount of the in-situ and laboratory testing required under the Regional Water Quality Control Board, Waste Discharge Requirements, are often performed in the EIR stage of project development. These types of EIR analyses provide all parties with an early warning of problems and available mitigation measures, which are necessary for well planned project development.

15.4 PERMIT PROCESS TIMING

Table XV-1 provides a listing of the minimum time required for processing each permit. The actual time required for a particular project can vary, depending upon information and data available, public controversy, land use siting policies, and other such factors. The timing list (Table XV-1) is based upon local and State project experiences, and assumes optimal processing conditions, following a formal determination of application completeness. Project experience has shown that it can take from six months to one year for preparation of complete applications for the County Conditional Use Permit, County/State Facility Permits, and Regional Water Quality Control Board Waste Discharge Requirements. Table XV-1 also indicates whether the permits can be processed concurrently or sequentially. The average lead time required, prior to beginning operations at new landfill site, is three to five years.

15.5 CONCURRENT VERSUS SEQUENTIAL PROCESSING

At specific points in the permit process there are opportunities for concurrent processing of local and State permits. The time savings under the concurrent processing scenario can vary from ninety (90) to one hundred-eighty (180) days. However, there are certain applicant tradeoffs involved; so it should be understood that concurrent processing is not mandatory, but merely represents an available option.

Whether the concurrent or sequential option is most appropriate for a particular project depends on many factors which must be weighed by a prospective applicant. Under the concurrent scenario, an applicant may have to provide all hydrogeologic data on the project site and general area in the joint application phase of project development. Test demonstrations or published analyses on waste stream characteristics could be required, as well as detailed leachate, gas collection, monitoring, and closure plans. These are examples of what a prospective applicant should consider in determining whether to select the concurrent or sequential processing option.

Processing scenarios for both the concurrent and sequential options are provided in Figures XV-1 and XV-2. A prospective applicant should contact each agency for further detailed information.

15.6 PERMIT PROCESSING STEPS

A review of the procedural steps in the local and State priority permit process is provided in Table XV-3. Procedural steps are constantly revised due to yearly legislative changes and streamlining efforts. It is advisable that a prospective applicant review Table XV-3 with each agency during the pre-application phase of project development.

15.7 PERMIT APPLICATION AND SUPPORTING DATA REQUIREMENTS

A listing of application data requirements for priority permits is provided in Table XV-4. Sample application packets for County permits, and there respective processes including detailed instructions for preparing the applications, can be obtained by contacting the County Resources Management Agency, Planning Division. State agencies should be individually contacted for their respective permit packets.

Please note that much of the support data is applicable to several of the permits. Most operation, closure, post closure, monitoring, and financial plans prepared for the County/State Facility Permits should satisfy the application provisions of the Regional Water Quality Control Board Waste Discharge Requirements, the County Conditional Use Permit, and the Coastal Development Permit.

15.8 MINIMUM DEVELOPMENT STANDARDS

A listing of minimum development criteria/standards is provided in Table XV-5. As a rule of thumb, a permit will not be issued unless a project meets the respective criteria, thus the criteria should be given serious consideration in the preliminary and final siting and design phases of project development. There is some degree of overlap by local and State agencies in assuring that the criteria are met. Overlap is partly due to the sharing of the environmental document by all agencies, and the commonality of air, soil, and water quality issues.

The criteria are generalizations of specific standards prescribed by various regulations, including the California Administrative Code, State Health and Safety Code, Public Resources Code, and past practices, to name a few. Table XV-5 is not all inclusive, and should be used only as a starting point in discussions with each agency.

TABLE XV-3

PROCESS STEP CHART *

	STEP 1	STEP 2	STEP 3
COUNTY CONDITIONAL USE PERMIT	Pre-submittal meeting(s)	Application and fees submitted (Application filed with County Planning Division)	Application completeness review phase (if necessary, further data requested)
APCD PERMITS	Pre-submittal meeting(s)	Application and fees submitted	Application completeness review phase
COASTAL COMMISSION COASTAL DEVELOPMENT PERMIT	Pre-submittal meeting(s)	Application and fees submitted	Application completeness review phase
COUNTY/STATE SOLID WASTE FACILITY PERMIT	Pre-submittal meeting(s)	Application and fees submitted (Application filed with County Environmental Health Division)	Application completeness review phase
STATE HEALTH HAZARDOUS WASTE FACILITY PERMIT	Pre-submittal meeting(s)	Application and Operations Plan Application filed with Hazardous Waste Management Branch	Application completeness review phase
REGIONAL WATER BOARD WASTE DISCHARGE REQUIREMENTS	Pre-submittal meeting(s)	Application and fees submitted	Application completeness review phase

* ONLY DENOTES PRIORITY PERMITS

TABLE XV-3 (CONT'D.)
PROCESS STEP CHART *

	STEP 4	STEP 5	STEP 6	STEP 7
COUNTY CONDITIONAL USE PERMIT	New Case (staff) Meeting to establish Initial Study direction and issues	Initial Study phase Environmental document determination	Notice of Preparation phase Concurrent EIR scoping, consultant selection, and contract development	Board of Supervisors Hearing for authoriza- tion of EIR scope and contract
APCD PERMITS	Statewide compliance verified	New Source Review Best Available Control Technology (BACT) determination	Prohibition compliance review	Emissions data review
COASTAL COMMISSION COASTAL DEVELOPMENT PERMIT	Coastal Act/Plan conformance review Land use designation conformance Policy review (i.e., coastal dependency; natural resources impact; etc.)	Review environmental reports (i.e. EIR; technical data; etc.) or request analysis on out- standing issues Coordinate with other agencies and public groups	Prepare proposed findings Review proposed findings relative to prior Commission decisions	Develop and review draft permit with other agencies and the applicant
COUNTY/STATE SOLID WASTE FACILITY PERMIT	Coordinate filing status and hearing schedule with the State Solid Waste Management Board	County Solid Waste Management Plan conformance review (State Board cannot concur in staff finding until Step II	Review environmental reports or request analysis on outstanding issues	Review the Report of Disposal Site Info. (draft operation, mon- itoring, safety & clo- sure plans) (usually involves clarification of info. or submittal of support data by applicant
STATE HEALTH HAZARDOUS WASTE FACILITY PERMIT	Develop Project Decision Schedule (i.e. target dates for draft permit; public notice and comments; and final permit	Coordinate review of application package with the US Environmental Protection Agency (Region IX) & the Regional Water Quality Control Board	Review Operation Plan (if necessary, further data requested) Conduct site inspection and develop related report	Technical review of proposed waste stream & develop related report Review environmental reports (i.e. EIR)
REGIONAL WATER BOARD WASTE DISCHARGE REQUIREMENTS	Review environmental reports (i.e., EIR)	Review Report of Waste Discharge and related technical data (i.e., geologic & hydrologic tests; seismic analysis, drainage/engineering analysis; etc.)	Review related opera- tion plan; closure plan; post-closure plan; financial responsibility plan; etc.	Develop draft ground- water and surface water monitoring plan

* ONLY DENOTES PRIORITY PERMITS

TABLE XV - 3 (CONT'D.)
PROCESS STEP CHART *

	STEP 8	STEP 9	STEP 10	STEP 11
COUNTY CONDITIONAL USE PERMIT	Consultant EIR analysis and preparation of draft manuscript	County review of screen check draft EIR Consultant revisions and printing	Statewide distribution of draft EIR EIR public review phase Environmental Report Review Committee Hearing(s)	Consultant revisions and response to comments County review of screen- check Final EIR Consultant revisions and printing
APCD PERMITS	Emissions allocation, offset or banked Air Quality Maintenance Plan (AQMP) conformance review	Draft permit conditions developed in coordination with applicant and other agencies	Distribution of permit notice (only for major sources) Review of draft permit with public groups (upon request)	Permit granted or denied by Air Pollution Control Officer
COASTAL COMMISSION COASTAL DEVELOPMENT PERMIT	Finalize draft permit Schedule hearing Distribution of hearing notice.	Public workshop for pre-hearing draft permit review	Coastal Commission Hearing for final decision	
COUNTY/STATE SOLID WASTE FACILITY PERMIT	Coordinate preliminary findings with other agencies & public groups (particularly the RWQCB) Determine consistency with State Board policies & regulations	Develop a "proposed" Solid Waste Facility Permit Review proposed permit with other agencies; the applicant; and public groups	Schedule State Solid Waste Management Board Hearing Distribution of hearing notice	State Solid Waste Manage- ment Board Hearing (review of draft permit; however, the County finalizes and issues the permit
STATE HEALTH HAZARDOUS WASTE FACILITY PERMIT	Develop a Fact Sheet & a Draft Hazardous Waste Facility Permit Review draft permit with other agencies & the applicant	Finalize draft permit & review with public groups Schedule hearing Distribution of hearing notice	Hearing by administrative staff (review only; no decision made)	Develop written response to comments Regional Administrator makes recommendation to State Health Director
REGIONAL WATER BOARD WASTE DISCHARGE REQUIREMENTS	Prepare proposed find- ings, and review them with other agencies	Develop Tentative Waste Discharge Requirements Review tentative require- ments with the applicant; other agencies; and public groups	Schedule hearing Distribution of hearing notice	Regional Water Quality Control Board Hearing(s)

* ONLY DENOTES PRIORITY PERMITS

TABLE XV-3 (CONT'D.)
PROCESS STEP CHART *

	STEP 12	STEP 13	STEP 14	STEP 15
COUNTY CONDITIONAL USE PERMIT	Statewide distribution of final EIR	Development Advisory Committee Hearing(s) for development and review of draft permit with other agencies; the applicant; and public groups	Finalize staff recommend- ation and report Schedule hearing Distribution of hearing notice	Planning Commission Hearing(s)
APCD PERMITS	Available appeal process to APCD Hearing Board			
COASTAL COMMISSION COASTAL DEVELOPMENT PERMIT				
COUNTY/STATE SOLID WASTE FACILITY PERMIT	Co. Environ. Health Officer reviews input of State Solid Waste Mgmt. Bd. & grants or denies permit (an approved permit must contain State Bd. conditions)			
STATE HEALTH HAZARDOUS WASTE FACILITY PERMIT	Final decision made by State Health Director Distribution of Notice of Final Permit Decision			
REGIONAL WATER BOARD WASTE DISCHARGE REQUIREMENTS	Available appeal process to State Water Resources Control Board			

* ONLY DENOTES PRIORITY PERMITS

TABLE XV - 3 (CONT'D.)
PROCESS STEP CHART *

	STEP 16	STEP 17
COUNTY CONDITIONAL USE PERMIT	Automatic appeal to Board of Supervisors Hearing(s) for final decision	Statewide posting of Notice of Determination; adopted permit conditions; and Findings of Overriding Consideration
APCD PERMITS		
COASTAL COMMISSION COASTAL DEVELOPMENT PERMIT		
COUNTY/STATE SOLID WASTE FACILITY PERMIT		
STATE HEALTH HAZARDOUS WASTE FACILITY PERMIT		
REGIONAL WATER BOARD WASTE DISCHARGE REQUIREMENTS		

* ONLY DENOTES PRIORITY PERMITS

Ventura County Resource Management Agency - January 1982

FIGURE XV-1 SEQUENTIAL PROCESSING SCENARIO

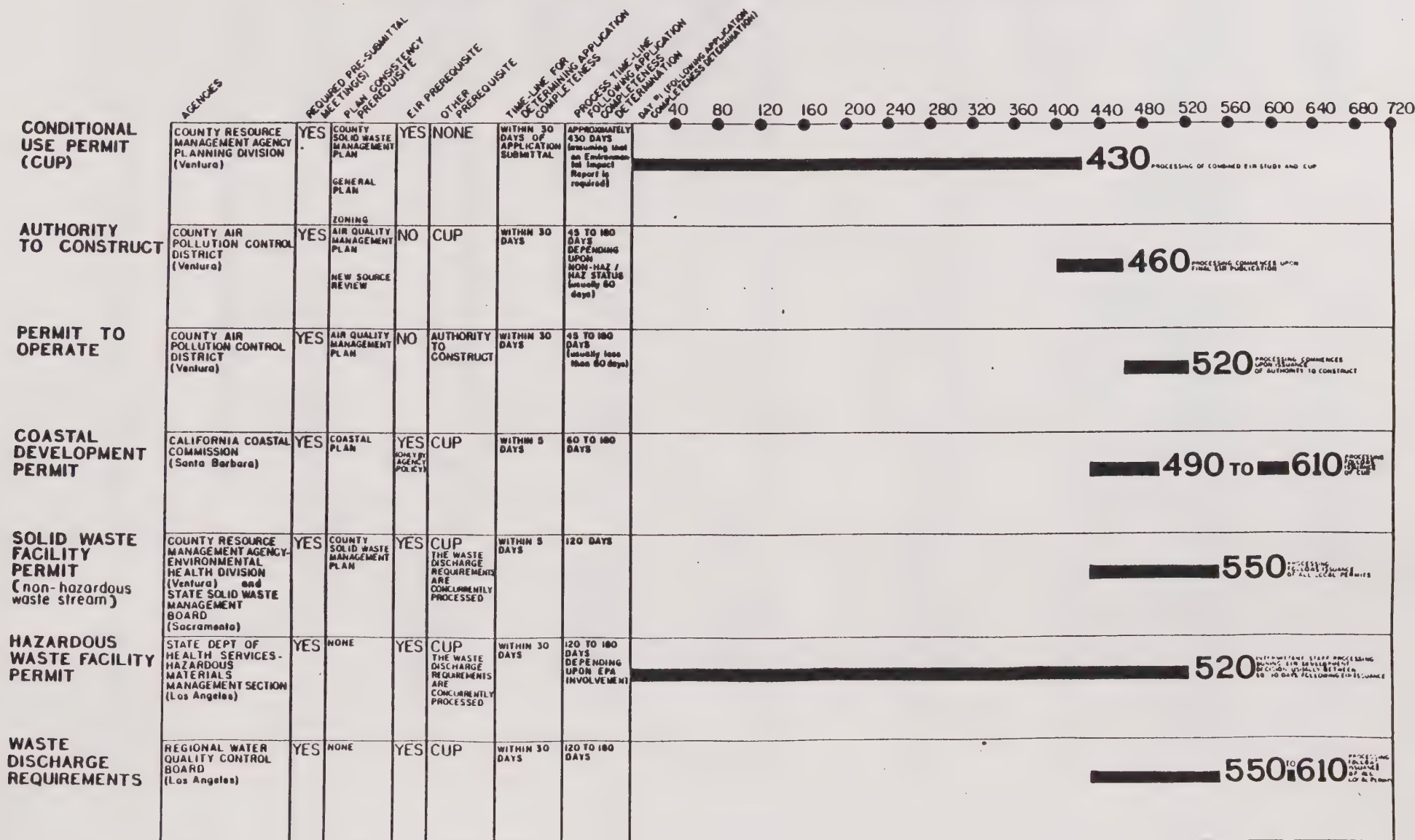
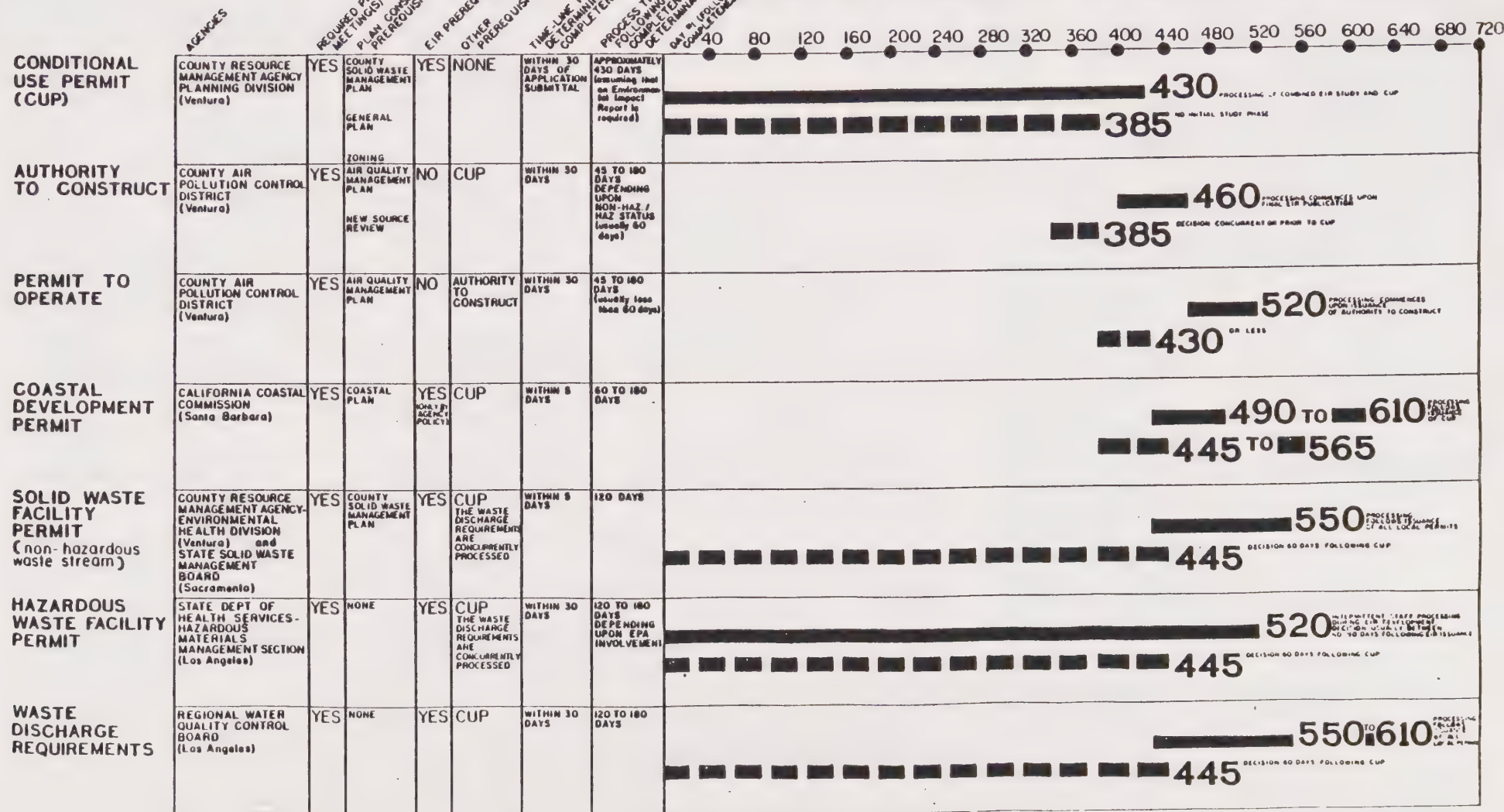


FIGURE XV-2. CONCURRENT PROCESSING SCENARIO *



STRAIGHT LINE MARK = DENOTE SEQUENTIAL PROCESS TIMING (SEE FIGURE 1)
HATCH MARK DENOTES CONCURRENT PROCESS TIMING

TABLE XV-4 - APPLICATION DATA REQUIREMENTS

<u>PERMIT</u>	<u>APPLICATION</u>	<u>SUPPORT DATA</u>	<u>APPLICABLE TO ALL PERMITS</u>
COUNTY OR CITY CONDITIONAL USE PERMIT	CUP-Application	Environmental Assessment Questionnaire	Waste Analysis Plan Inspection Schedule Training Program Safety Procedures Contingency Plan Operating Records and Reporting Plan
APCD PERMITS Record and Plan	APCD Application	Emissions Data Report	Closure Plan Post Closure & Maintenance Plan Storage Plan Treatment Plan Disposal Plan Salvaging Plan Grading Plan Drainage Plan Leachate Plan Monitoring Plans-Groundwater, etc Gas Migration Control Program (if applicable) Financial Responsibility
COASTAL COMMISSION COASTAL DEVELOPMENT PERMIT	Coastal Development Permit Application	All prerequisite permits and associated environ- mental documentation	
COASTAL/STATE SOLID WASTE FACILITY PERMIT	Solid Waste Facility Permit Application	Report of Disposal Site Information	
STATE HEALTH HAZARDOUS WASTE FACILITY PERMIT	State form 200	Operation Plan for Hazardous Waste Facility	
REGIONAL WATER BOARD Program WASTE DISCHARGE	State Form 200	Report of Waste Discharge Detailed Geologic/Hydro- geologic Assessment	Recorded Property Ownership or Lease

Source: County Planning Division 1983

TABLE XV-5 MINIMUM DEVELOPMENT STANDARDS

STATE HEALTH HAZARDOUS WASTE FACILITY PERMIT	REGIONAL WATER QUALITY CONTROL BOARD WASTE DISCHARGE REQUIREMENTS	OTHER (OF GENERAL APPLICATION TO ALL PERMITS)	COUNTY CONDITIONAL USE PERMIT	AIR POLLUTION CONTROL DISTRICT AUTHORITY/OPERATING PERMITS	COASTAL COMMISSION DEVELOPMENT PERMIT	COUNTY/STATE SOLID WASTE FACILITY PERMIT
Distance criteria of 2,000 feet to nearest residential property application of Federal Resource Conservation and Recovery Act (RCRA) criteria for waste filling and additions site, leachate, and gas must come in contact with surface or groundwater	1. Class II protection from 100 year flood 2. Class I protection from any without or erosion of waste 3. Final site cover of 3 feet of which 1 foot of cover cannot exceed a permeability of 10 ⁻⁶ cm/sec. 4. Detailed hydrological and geological data describing site and lateral hydraulic continuity control with groundwater and surface water 5. Detailed geologic/seismic review of active faulting potential (including subsidence and uplift) so that design of containment features is commensurate with land movement risks and anticipated seismic shock 6. Relative to item no. 5 above, absence of continuity of rock fracture or fissures 7. Final site slopes no greater than 3 percent 8. Waste, leachate, and gas cannot come in contact with surface or groundwater	1. Proximity to generation areas 2. Regional access via freeway or major rural arterial (while avoiding urban areas) 3. Acceptable access road grade, width, sight distance, etc. 4. Roadway noise level effects along access route 5. Not located within Alquist- Priolo Special Study Zones (fault areas) 6. Not located within drainage basin to domestic water supply reservoir 7. Not located within a known or suspected archaeological/ cultural resource site 8. Not located on a site where rare or endangered flora and fauna species have been observed or are expected to occur 9. Of less critical concern than item no. 8, avoidance of sensitive or important habitat area should be considered 10. Not located within the State Condor Sanctuary 11. Does not conflict with State or Federal land designations 12. Available water supply 13. Available utilities 14. Available cover material (if required by process) 15. Available emergency services 16. Rodent/vector control 17. Dust control 18. Proposed method or site versus available alternatives 19. State Executive Order precluding the landfilling of hazardous wastes post 1987 20. Substantial control resources within high fire hazard areas	1. County Solid Waste Management Plan Conformance 2. Zoning Ordinance 3. General Plan Elements 4. County 208 Plan Conformance 5. Property owner authorization for application submitted on specific project 6. Provide consideration of land use compatibility factors such as: a. citizen resistance b. distance/buffer zone c. proximity to developing areas d. visual screening potential e. avoid loss of prime agricultural land 7. Upfront decision by State Health on whether the waste stream is hazardous or non- hazardous	1. Cannot exceed 100 tons/day emission criteria 2. Must represent Best Available Control Technology (BACT) under New Source Review 3. Availability of Air Quality Management Plan emissions allocation or offset (App. conformance)	1. Coastal Plan Inclusion 2. Related adherence to Coastal Plan policies and/or performance criteria	1. County Solid Waste Management Plan Conformance 2. Cannot adversely affect drinking water and industrial water supply 3. Waste, leachate, and gas cannot come in contact with surface or groundwater 4. Cannot be located within 1,000 feet of an airport 5. Distance per Government Code 5 63784.1 6. Upfront decision by State Health on whether the waste stream is hazardous or non-hazardous

15.9 FINDINGS

- o The applicant has the option of concurrent or sequential permit processing. More responsibility is placed upon the applicant should the concurrent process be chosen, especially in the beginning of the process.
- o The concurrent schedule process is designed to accelerate the process of establishing waste management projects. However, this process assumes optimal permit process alternatives.
- o City permit requirements vary among jurisdictions. Additionally, as cities are more urban-intensive, it is less reasonable to assume the siting of a waste disposal facility within a city.
- o At present, any landowner in the County unincorporated areas with proper zoning may apply for a Conditional Use Permit to operate a municipal waste landfill. If found to conform with the Solid Waste Management Plan and if all other necessary permits are obtained, the landfill may be developed.
- o There are presently no restrictions on who may operate the site. There are no direct public controls over rate setting.
- o A study is currently underway by the County of Ventura to evaluate options in terms of public involvement in landfill operations. This study is scheduled for completion by early 1985. An initial assessment of County options in terms of public involvement is included in the Appendix.

15.10 RECOMMENDATION

- o Upon completion of the study noted above, it is recommended the Board of Supervisors take action as necessary to allow adequate participation of user governmental agencies in decisions regarding ownership and operation of future disposal sites in the western wasteshed. (Note: Already occurred).
- o Upon completion of the study noted above, the Board of Supervisors should determine the appropriate degree of public involvement in ownership and operation of western wasteshed facilities necessary to maintain the public good in terms of rate selling and site operation. (Note: Already occurred).

CHAPTER XVI

ADMINISTRATION, IMPLEMENTATION AND ECONOMIC FEASIBILITY

16.1 INTRODUCTION

This chapter of the CoSWMP delineates responsibilities for the administration of the Solid Waste Management Program within Ventura County (Table XVI-I). This chapter provides information concerning organizational functions, responsibilities for specific operational areas, administration alternatives and implementation of specific solid waste management tasks for the short (1985-1990), mid (1990-1995), and long-term (1995-2005) planning periods. The agencies and organizations responsible for accomplishing specific tasks within their areas of cognizance are also identified in the charts herein.

Title 14 of the California Administrative Code vests the responsibility for adopting the Solid Waste Management Plan with each County Board of Supervisors. State guidelines for development of County Solid Waste Management Plans further require that the responsibility for administering the Solid Waste Program be defined, [Section 17136(a)], that functional assignments for activities such as planning and enforcement be shown, [Section 17136(b)], and that the agency responsible for plan maintenance and revision be identified [Section 17136(c)].

In Ventura County, the overall administration of the Solid Waste Management Program is the responsibility of the County Board of Supervisors. This responsibility is currently assigned to the Resource Management Agency (RMA). Implementation of specific programmatic functions is largely assigned to the County Environmental Health Division, supplemented by specific assignments to the Ventura Regional Sanitation District and the County Planning Division.

A number of local governmental agencies have legal authority and capability to address certain solid waste problems. These include general law and charter cities, the Ventura Regional Sanitation District, and some other special districts and joint powers authorities. Private enterprises and non-profit organizations are also involved in some aspects of the solid waste system. Existing functional responsibilities are itemized in Table XVI-1. More specific program and project assignments are discussed in detail below under Implementation.

The responsibility for maintenance and revision of the County Solid Waste Management Plan was formerly contracted to the Ventura Regional Sanitation District from 1974 to 1982. Since 1982, the County has performed this function directly. The responsibility for preparing, maintaining, and updating the Plan is presently assigned to the Planning Division of the Resource Management Agency.

16.2 COORDINATION DURING PLAN PREPARATION

In order to provide for adequate coordination between County agencies, cities, the Ventura Regional Sanitation District, the public, citizen groups and private industry, two CoSWMP coordinating committees were established to review and advise Planning Division staff concerning development of the CoSWMP update.

- o Solid Waste Coordinating Committee (SWCC)

This Committee is comprised of members from industry, government and local citizen groups. It functions as a technical review and advisory committee, as it relates to the development of the CoSWMP.

It is intended that this committee will continue to meet on a regularly scheduled basis to provide input, to monitor implementation progress, and to provide coordination and review of issues relative to Solid Waste Management.

- o Countywide Planning Program (CPP) Solid Waste Management Subcommittee

This Subcommittee advises the full Countywide Planning Program (CPP) on matters relative to CoSWMP and is comprised of members from the full CPP. It was formed to review the CoSWMP. The Subcommittee Chairperson reports all subcommittee findings and recommendations to the full CPP Advisory Committee for action.

In addition to coordinating with these committees, the County Planning Division is also responsible for providing direct coordination with representatives of groups not necessarily on these committees. Therefore, additional meetings are held with citizen and industry organizations, and the general public to provide for full public participation and Countywide coordination (Refer to Chapter I - Introduction).

- o Task Force

A task force comprised of two members of the Board of Supervisors and six City Council members, was established to address issues and alleviate concerns regarding solid waste management planning. This task force was particularly instrumental in the review and analysis of seven issue papers (Appendix E), whose resolution influenced the preparation of the Final Draft CoSWMP.

16.3 ADMINISTRATION

The Solid Waste Management Program in Ventura County is administered by the County Board of Supervisors. Many regulatory, enforcement, and permitting authorities are vested with the County by State law. Only the Board of Supervisors, for example, with the concurrence of the majority of the cities representing the majority of the incorporated population, may adopt or amend Ventura County's Solid Waste Management Plan.

The County's Environmental Health Division is charged with conducting the Solid Waste Enforcement Program pursuant to the California Health and Safety Title 7.3 of the Government Code of Title 14 of the Administration Code. The County regulates the development of new solid waste facilities in unincorporated areas through its planning authority to grant or withhold land use entitlements. It further controls landfill siting by its authority to find conformance with the Solid Waste Management Plan, and also to process Solid Waste (operating) permits on behalf of the State through the Environmental Health Division.

While overseeing the entire Solid Waste Program, specific functions are assigned to other agencies, primarily the Ventura Regional Sanitation District. Assignment of functional responsibilities, both in terms of

statutory requirements and discretionary assignments, are discussed in the next section.

16.4 IMPLEMENTATION

A. Introduction

The various functional responsibilities, including planning, coordination, permitting, regulating, enforcing and inspecting, are mandated by law to be delegated to specific governmental agencies and organizations for implementing. A variety of public agencies have both the legal authority and capability to address solid waste problems (including the County itself, general law cities, charter cities, and some special districts and joint power authorities.

Factors to be considered when reviewing administrative alternatives include the functions to be undertaken, existing state and local laws and regulations, and the division of responsibilities within the agency or agencies involved. The specific operations to be conducted and the agencies abilities to accomplish the specific function must also be considered. The solid waste functions requiring action by one or more public agencies include planning, enforcement, facility operations, storage and collection, processing of solid waste, and disposal. Many of these functions are already vested within the County, most notably in the Environmental Health Division.

B. Implementation Schedule

In accordance with California Administrative Code Title 14, Section 66714.9, the County Solid Waste Management Plan must include an implementation schedule for the short (1 to 5 year), mid (5 to 10 year), and long (10 to 20 year) term Planning periods. This implementation schedule is provided in Table XVI-2. It identifies specific tasks to be accomplished, and agencies responsible for accomplishing and coordinating completion of the tasks identified within the three planning periods. Each one of the organizations that are responsible for implementing and coordinating various phases of the CoSWMP are listed in the implementation schedule. Lead agencies are identified and other agencies and organizations that must provide and coordinate support are also identified within the implementation schedule.

C. Work Program

Detailed work programs will be developed by Planning Division staff and presented to the Board of Supervisors for adoption annually. The recommendations section of each CoSWMP Chapter provides detailed information and identifies manpower resources and costs associated with accomplishing all recommended tasks for the first three years of the short-term planning period. The last two years of the short-term period will include developing the mandated three year update of the CoSWMP which will be initiated in 1987-88. All tasks to be accomplished are identified in each Chapter of the CoSWMP. During the first three years, implementation of the CoSWMP is divided into three phases. Major tasks scheduled are outlined below.

Table XVI-1

Organizations Performing Solid Waste Management and
Administration Functions Within Ventura County

Functions

ORGANIZATIONS	PROGRAM ADMIN.	CoSWMP PLAN MAINT.	COORD.	PUBLIC INFO.	ENFORCE	PERMIT	PLANNING	REGULATION	DISPOSAL	ENERGY & MATERIALS RECOVERY	TRANSFER FACILITY OPERATIONS	LITTER MGMT.	STORAGE COLLECTION	MUNICIPAL WASTES LANDFILL OPERATIONS
State			X	X	X	X		X						
Regional Water Quality Control Board			X	X		X		X						
County:														
Planning Div.	X	X	X	X	X	X	X	X						
Env. Health Div.			X	X	X	X	X	X				X	X	
APCD			X	X	X	X		X						
VRSD			X	X					X	X	X	X		X
Cities		X			X	X	X	X	X			X	X	
Public Non-Profit Organizations			X							X				
Private Enterprise			X				X		X	X	X	X	X	X

Source: Ventura County Planning Division 1984

Table XVI-1 (Cont'd)

Organizations Performing Existing Solid Waste Management and
Administration Functions within Ventura County

	Functions					
	AGRICULTURAL WASTE	HAZARDOUS WASTE	PESTICIDE WASTE	INFECTUOUS WASTE	SLUDGE	OIL FIELD WASTE
State	X				X	X
California Waste Management Board Department of Health Services		X	X	X	X	X
Regional Water Quality Control Board	X	X			X	X
County:						
Planning Div.	X	X	X	X	X	X
Env. Health Div.	X	X	X	X	X	X
APCD	X	X	X	X	X	X
Farm Advisor	X	X				
Agricultural Commissioner	X	X				
VRSD	X	X	X		X	X
Cities					X	
Public Non-Profit Organizations						
Private Enterprise	X	X	X	X	X	X

Source: Ventura County Planning Division 1984

TABLE XVI-2
CoSWMP IMPLEMENTATION SCHEDULE
DISPOSAL AND TRANSFER FACILITIES

	Short Term (1985-1990)	Mid Term (1990-1995)	Long Term (1995-2005)
1. <u>Identify and establish operation of a new municipal waste landfill disposal facility in the western watershed area by 1991 in order to provide needed future disposal capacity.</u>	X	X	

Responsible Agencies: Ventura County Planning Division* (Planning) is responsible for identifying tentative landfill locations. Either Ventura Regional Sanitation District (VRSD), the County or private industry will be responsible for acquiring and/or operating the new site.

Estimated Resources Required: No additional resources are required as this is part of the ongoing CoSWMP update.
 However, considerable resources will be needed by applicant to purchase/lease and operate the site.

2. Evaluate Technical Feasibility of landfill for inert materials on Santa Clara River. Although development of a municipal waste landfill along the Santa Clara River was not supported by CoSWMP, it may be economically and technically feasible to site a disposal facility for inert material there. This deserves study, especially in conjunction with potential waste-to-energy projects.

Responsible Agencies: Planning Division*, VRSD, City of Oxnard and/or private industry.

Estimated Resources: Approximately two staff months.

3. Process Amendments to CoSWMP to consider new tentative municipal solid waste sites. The CoSWMP provides for addition of new tentative sites if proven "economically and technically viable." This task would be to process any such requests. The Board of Supervisors on October 30, 1984 directed that such a Plan Amendment be scheduled within 18 months of Plan approval by the California Waste Management Board, to consider inclusion of Santa Clara River landfill sites.

Short Term (1985-1990)	Mid Term (1990-1995)	Long Term (1995-2005)
------------------------------	----------------------------	-----------------------------

Responsible Agencies: Applicant, Planning Division*, Environmental Health.

Estimated Resources: No additional County resources are required, as costs of developing data would be borne by the applicant and processing the amendment would be handled by County CoSWMP staff.

4. Determine Public Role in Municipal Waste Landfill Operations.

X

At present, any landowner or designate agent of a landowner with appropriately zoned land may apply for permission to operate a municipal waste landfill. If all needed permits are obtained and findings made, the landfill can be developed. A study is under way as of October, 1984, to evaluate options in terms of public participation in landfill aquisition and/or operations of future landfills. Implications for the County, the VRSD, the cities, the private sector, and the public will be addressed. The Board of Supervisors is scheduled to act in early 1985.

Responsible Agencies: County Chief Administrative Office*, Planning Division*, Environmental Health, VRSD, cities.

Estimated Resources: Approximately two to three staff months, to be completed in early 1985.

* Indicates the lead agency.

TABLE XVI-2
CoSWMP IMPLEMENTATION SCHEDULE (cont.)
RESOURCE RECOVERY

	<u>Short Term</u> (1985-1990)	<u>Mid-Term</u> (1990-1995)	<u>Long-Term</u> (1995-2005)
1. <u>Provide support of packaging legislation at the State, Federal and/or local levels which will encourage material savings.</u>	X		
Responsible Agencies: Planning* and VRSD			
Estimated Resources Required: Approximately five hours/month to review, analyze and formally respond to appropriate waste related legislation.			
2. <u>Provide education to the public advocating wise consumption and reuse of packaging purchased. Indicate how waste reduction efforts can save materials and natural resources, reduce energy demand, ease environmental problems, and reduce the escalating cost of living in today's industrialized world. An appropriate method of achieving this task would be to establish a public informational newsletter on recycling and resource recovery, or a section on this subject may be established in the current solid waste management newsletter. In addition, work closely with volunteer organizations (i.e., Homeowners' Associations, etc.) to increase resource recovery education.</u>	X		
Responsible Agencies: Planning* and VRSD			
Estimated Resources Required: It is recommended an informational newsletter on recycling and resource recovery be written on a quarterly basis (every three months) and distributed to schools, libraries and any other appropriate place. This task will require approximately eight to twelve person hours every three months. Approximately ten person hours each month will be required for public presentations.			

* Indicates the lead agency.

TAB I VI-2
CoSWMP IMPLEMENTATION SCHEDULE (cont.)
RESOURCE RECOVERY

	<u>Short Term</u> (1985-1990)	<u>Mid-Term</u> (1990-1995)	<u>Long Term</u> (1995-2005)
3. <u>Develop and maintain accurate information on the types and quantities of solid waste generated and disposed of in Ventura County.</u> This information will aid in planning for additional, appropriate resource recovery facilities. It is recommended that this information be computerized, as this would facilitate thorough and timely data analysis.	X		
Responsible Agencies: Planning* and VRSD			
Estimated Resources Required: Presently, much of this information is collected by VRSD. Once Environmental Health formally request specific data from VRSD on a monthly basis, it is anticipated that one person, working full-time on this task, could set up a CoSWMP Planning Data file system in approximately four to six weeks. Maintenance and upkeep of the files thereafter, would take an estimated five to ten person hours a month. Computerization of this information would greatly enhance data analysis. Costs to accomplish this is undetermined at this time.			
4. <u>Identify and track additional potential markets for recovered materials.</u> The National Bureau of Standards, in conjunction with the California Waste Management Board, is surveying the State of California and determining the markets for recycled commodities. This is an effort to match recycled material users (buyers) with recycled material centers or collection points (sellers). Ventura County plans to cooperate with these agencies gathering governments to "buy recycled." NBS has offered to work hand-in-hand with governmental purchasing officers. Public information on available recycled material markets will be disseminated and directed to large industries, as well as the general public and local government purchasing departments.	X		

* Indicates the lead agency.

TABLE XVI-2
CoSWMP IMPLEMENTATION SCHEDULE (cont.)
RESOURCE RECOVERY

	Short Term (1985-1990)	Mid-Term (1990-1995)	Long Term (1995-2005)
Responsible Agencies: VRSD* and Planning			
Estimated Resources Required: This task will require approximately two to five person days per month, once the California Waste Management Board has completed its survey of available markets for recycled commodities. Duties would encompass identifying and contacting industries and local government purchasing departments, and encouraging procurement of recycled materials within Ventura County. Additional time will be required with Ventura County's Support Services Agency.			
5. <u>Assess the need to conduct two surveys of Ventura County to determine where a source separation curbside recycling pilot project could be most successfully established.</u> The first survey could establish Ventura County's citizens' receptiveness to curbside collection in general. The second survey could identify under what conditions would those who expressed an interest, be willing to take part in a pilot project and identify receptive geographic areas of the County.	X		
Responsible Agency: Planning* and VRSD			
Estimated Resources Required: It is estimated that approximately one staff person for three to four weeks time could develop and distribute these two surveys. A detailed analysis of these two surveys would require approximately a week and a half to two weeks each.			X

* Indicates the lead agency

TAB XVI-2
CoSWMP IMPLEMENTATION SCHEDULE (cont.)
RESOURCE RECOVERY

	<u>Short Term</u> (1985-1990)	<u>Mid-Term</u> (1990-1995)	<u>Long Term</u> (1995-2005)
6. <u>Develop a 'citizens' guide to recycling in Ventura County. This guide could describe current resource recovery and recycling efforts in Ventura County and provide a listing and a map of all known recycling centers, including items recycled, location and hours of operation.</u>	X		
Responsible Agencies: VRSD* and Planning			
Estimated Resource Required: To develop a citizens' guide, newspaper advertising used as a public service should be explored as a means of soliciting citizen input. This task will require one staff person's time for approximately four weeks. An additional one week's time for one person will be needed to distribute this information (i.e., public presentation, development of a mailing list). Additional time to update the citizens' guide should be determined as required.			
7. <u>Assess the need for and coordinate the establishment of satellite donation or buy back centers at convenient locations, such as local and regional community shopping centers.</u>	X		
Responsible Agencies: Planning* and VRSD			
Estimated Resources Required: This task will require approximately 160 person hours to develop a feasibility study and coordinate with shopping center managers. An additional 160 person hours would be needed to assist in actually coordinating the establishment of these satellite centers.			

*Indicates the lead agency

TABLE XVI-2
CoSWMP IMPLEMENTATION SCHEDULE (cont.)
RESOURCE RECOVERY

	<u>Short Term</u> (1985-1990)	<u>Mid-Term</u> (1990-1995)	<u>Long Term</u> (1995-2005)
8. <u>Determine the need for and, where feasible, establish other waste to energy projects in the County. Monitor the feasibility of proposed Waste-To-Energy (WTE) projects and, where feasible, initiate a WTE project.</u>	X	X	X
Responsible Agencies: VRSD*, Planning and City of Oxnard			
Estimated Resources Required: Monitoring will require approximately six to eight person hours per month. Additional time would be needed to facilitate viable projects.			
9. <u>Develop an ordinance that would require, as a condition of the CUP, that operators of new waste facilities shall provide plans for resource recovery at the site and consider increasing compaction of landfilled wastes at sites, to maximize site life.</u>		X	X
Responsible Agencies: Planning*, Environmental Health, and VRSD			
Estimated Resources Required: Staff time required to incorporate this as a policy of the CoSWMP is undetermined at this time.			
10. <u>Analyze forms of site separation equipment, and determine if the site operator can utilize a pretreatment process for recovering materials from the waste stream. Compile cost data and analysis along with a staff report and recommendation.</u>	X	X	

* Indicates the lead agency

TAB. XVI-2
CoSWMP IMPLEMENTATION SCHEDULE (cont.)
RESOURCE RECOVERY

<u>Short Term</u> (1985-1990)	<u>Mid-Term</u> (1990-1995)	<u>Long Term</u> (1995-2005)
----------------------------------	--------------------------------	---------------------------------

Responsible Agencies: VRSD* and Planning

Estimated Resources Required: This task will take one staff person's time approximately two to three weeks to research and report recommendations. Input from industry and cities will also be needed.

11. Continue to study and research energy recovery options, and determine which options(s) may be economically and environmentally viable alternatives to traditional waste disposal methods for Ventura County. This study will encompass identifying front-end costs (as well as a cost analysis), air pollution control requirements, funding sources, and marketability of end product. Criteria will also be developed to help identify possible locations for additional waste to energy and resource recovery facilities. Keep up with alternative "state of the art" resource recovery technology.

X

Responsible Agencies: VRSD* and Planning

Estimated Resources Required: Depending upon the amount of energy recovery options available, a 3 to 4 month effort may be required for one full time staff person. Input from private enterprise, and cities will also be required.

12. Continue short term resource recovery program tasks 1, 2, 3, 4, 5, 6 and 7; and redefine these tasks as needed. Responsible agency and estimated costs will likely remain the same unless revised during the triennial update of the CoSWMP.

X

* Indicates the lead agency

TABLE XVI-2
CoSWMP IMPLEMENTATION SCHEDULE (cont.)
RESOURCE RECOVERY

	<u>Short Term</u> (1985-1990)	<u>Mid-Term</u> (1990-1995)	<u>Long Term</u> (1995-2005)
13. <u>Coordinate implementation of additional waste to energy plants in Ventura County if number 11 above proves feasible.</u> Responsible agencies will remain VRSD* and Planning.			X
14. <u>Coordinate implementation of source and/or site separation programs in Ventura County.</u> Responsible agencies will remain Planning* and VRSD.			X
15. <u>Continue short and medium term program tasks and redefine these tasks as needed.</u> Responsible agencies and cost estimates will likely remain the same unless revised during the triennial update of the CoSWMP.			X

* Indicates the lead agency

TAB XVI-2
CoSWMP IMPLEMENTATION SCHEDULE (cont.)
LITTER MANAGEMENT

	<u>Short Term</u> (1985-1990)	<u>Mid-Term</u> (1990-1995)	<u>Long Term</u> (1995-2005)
1. <u>Actively seek financial assistance and grants for County Litter Management activities.</u>	X		
Responsible Agencies: Environmental Health* and Planning			
Estimated Resources Required: 1 man month.			
2. <u>Investigate the need for establishing additional anti-litter stations.</u>	X	X	
Responsible Agencies: VRSD* and/or private sector.			
Estimated Resources Required: To be determined by responsible agency.			
3. <u>Publish operating hours of all sites and transfer stations in local news media.</u>	X		
Responsible Agencies: VRSD* and Planning Division			
Estimated Resources Required: On a quarterly basis 1 person would be required for one day (1 man week/year).			
4. <u>Investigate ways anti-litter stations can be made more accessible to the public (i.e., recycling aluminum cans etc.).</u>	X		
Responsible Agency: VRSD*			
Estimated Resources Required: 1 man month/yr.			

* Indicates the lead agency

TABLE XVI-2
CoSWMP IMPLEMENTATION SCHEDULE (cont.)
AGRICULTURAL WASTE MANAGEMENT

	Short Term (1985-1990)	Mid-Term (1990-1995)	Long Term (1995-2005)
1. <u>Continue enforcement of agricultural odor and vector problems on a case by case basis.</u>	X	X	X
Responsible Agencies: Environmental Health*, Agricultural Commissioner, and Farm Advisor (for information).			
Estimated Resources Required: No additional resources needed, adequate staff are currently assigned to inspect agricultural operations.			
2. <u>Continue to review enforcement policies and standards pertaining to the collection, handling, processing, loading, transport and disposal of agricultural waste.</u>	X	X	X
Responsible Agencies: Environmental Health*, Agricultural Commissioner, and Farm Advisor.			
Estimated Resources Required: No additional resources needed. Adequate staff are currently assigned to this task.			
3. <u>Continue to issue permits and inspect agricultural waste management operations for compliance with permit conditions.</u>	X	X	X
Responsible Agencies: Environmental Health*, Agricultural Commissioner, and Planning.			
Estimated Resources Required: No additional resources needed. Adequate staff are currently assigned to accomplish this task.			

* Indicates the lead agency

TABI VI-2
CoSWMP IMPLEMENTATION SCHEDULE (cont.)
AGRICULTURAL WASTE MANAGEMENT

	<u>Short Term</u> <u>(1985-1990)</u>	<u>Mid-Term</u> <u>(1990-1995)</u>	<u>Long Term</u> <u>(1995-2005)</u>
4. <u>Evaluate potential markets and recovery systems in order to extend landfill life, and assist in the implementation of recovery, reuse, recycling, and marketing of agricultural wastes and residues.</u>	X	X	

Responsible Agencies: Planning Division*, Farm Advisor.

Estimated Resources Required: It is estimated that 2 man weeks will be needed to evaluate potential markets for agricultural wastes and residues and identify additional recovery, reuse and recycling methods.

* Indicates the lead agency

TABLE XVI-2
CoSWMP IMPLEMENTATION SCHEDULE (cont.)
HAZARDOUS WASTE MANAGEMENT

	Short Term (1985-1990)	Mid-Term (1990-1995)	Long Term (1995-2005)
1. <u>Control Hazardous Waste Generators</u>	X		
o Conduct a Countywide survey and inventory of all generators of hazardous waste			
o Educate and provide information to industries on current regulations concerning hazardous waste			
o Inspect all hazardous waste generators on an annual basis			
o Develop and update ordinance requirements permits and fees from all generators of hazardous waste			
o Conduct investigations of complaints regarding illegal hazardous waste disposal practices			
2. <u>Control Abandoned Hazardous Waste Sites</u>	X		
o Develop protocol for conducting and participating in abandoned site surveys and clean-up activities pursuant to Department of Health Services contracts.			
o Incorporate into the land use review process protocols for handling abandoned sites			
3. <u>Reduce Illegal Dumping</u>	X		
o Develop and implement a public education program to educate the public and private sectors in identification and reporting of illegal dumping incidents			

TABL VI-2
CoSWMP IMPLEMENTATION SCHEDULE (cont.)
HAZARDOUS WASTE MANAGEMENT

	Short Term (1985-1990)	Mid-Term (1990-1995)	Long Term (1995-2005)
4. <u>Respond to Emergencies</u>	X		
o Establish an emergency response plan and coordinate with enforcement and fire protection personnel during hazardous materials incidents response			
5. <u>Hazardous Waste Management Planning</u>	X		
o Complete a hazardous waste characterization study			
o Update the hazardous waste element of the County Solid Waste Management Plan			
o Develop a Countywide hazardous waste data base			
6. <u>Hazardous Waste Facilities</u>	X		
o Investigate the need for and feasibility of establishing a small volume hazardous waste transfer station			
o Investigate the possibility of establishing Hazardous Waste Transfer Facilities at large industrial parks or complexes			
Responsible Agencies: The Environmental Health Division* is the Lead Agency for the Hazardous Waste tasks indentified above. They will coordinate with other agencies as appropriate.			
Estimated Resources Required: Tasks identified have been scheduled for accomplishment by the Environmental Health Division's Hazardous Materials Management team composed of three persons.			

* Indicates the lead agency

TABLE XVI-2
CoSWMP IMPLEMENTATION SCHEDULE (cont.)
PESTICIDE WASTE MANAGEMENT

	<u>Short Term</u> <u>(1985-1990)</u>	<u>Mid-Term</u> <u>(1990-1995)</u>	<u>Long Term</u> <u>(1995-2005)</u>
1. <u>Determine the quantities of pesticide waste generated, types of waste, frequency of generation and need for small volume homeowner pesticide waste collection and transfer facility.</u>	X		

Responsible Agencies: VRSD*, and the Agricultural Commissioner will prepare, conduct and accomplish a homeowner pesticide waste generation and disposal survey.

Estimated Resources Required: It is estimated that approximately two person months would be required to conduct a Countywide survey.

* Indicates the lead agency

TAB. XVI-2
CoSWMP IMPLEMENTATION SCHEDULE (cont.)
INFECTIOUS WASTE MANAGEMENT

	<u>Short Term</u> (1985-1990)	<u>Mid-Term</u> (1990-1995)	<u>Long Term</u> (1995-2005)
1. <u>Develop a Staff Resources Assessment Based on an Evaluation of New DOHS Infectious Waste Regulations When These Regulations are Implemented.</u>	X		
<p>New Department of Health Services Regulations regarding infectious waste will need to be assessed by the County Health Officer in light of additional County manpower and resources needed to implement these regulations.</p> <p>Responsible Agency: Environmental Health*</p> <p>Estimated Resources Required: Due to these new requirements, an additional health inspector may be needed to provide for enforcement. However, a staff resources assessment will be developed by the County's Environmental Health Division within the short-term planning period. This assessment may require 2 man weeks to complete.</p>			
2. <u>Develop Infectious Waste Policy and Procedures Plan</u>	X		
<p>The Ventura County Health Officer will develop an updated County infectious waste policy and procedures plan and maintain interagency cooperation between affected agencies.</p> <p>Responsible Agency: Environmental Health*.</p> <p>Estimated Resources Required: It is estimated that a new infectious waste procedures plan would require a full-time sanitarian approximately one man week to develop. This plan should be scheduled to be developed within the short-term planning period.</p>			

* Indicates the lead agency

TABLE XVI-2
CoSWMP IMPLEMENTATION SCHEDULE (cont.)
INFECTIOUS WASTE MANAGEMENT

	Short Term (1985-1990)	Mid-Term (1990-1995)	Long Term (1995-2005)
3. <u>Develop a Formal Infectious Waste Identification Training Program for Landfill Operators</u>	X		
<p>In order to prevent improper disposal of infectious waste at Ventura County landfills, landfill site operators must be trained in the proper identification of infectious waste.</p> <p>Responsible Agency: Environmental Health*.</p> <p>Estimated Resources Required: It is estimated that it would take a full time Sanitarian approximately two man weeks to develop and implement a training program. This training program should be developed during the short term planning period.</p>			
4. <u>Investigate and Determine the Environmental Health Impacts From Small Generators of Infectious Wastes Including Doctors' Offices, Medical Groups, Clinics and Veterinary Facilities</u>	X		
<p>The Ventura County Environmental Health Division will develop, investigate and determine the environmental and health impacts from small generators of infectious waste including a characterization of infectious waste materials generated from doctors' offices, medical groups, clinics and veterinary facilities.</p> <p>Responsible Agency: Environmental Health*.</p> <p>Estimated Resources Required: It is estimated that it would take a full time sanitarian approximately two man weeks to develop a survey of small infectious waste generators, and estimate the impacts from these sources. This investigation should be scheduled for the short term planning period.</p>			

X

* Indicates the lead agency

TABi VI-2
CoSWMP IMPLEMENTATION SCHEDULE (cont.)
INFECTIOUS WASTE MANAGEMENT

	<u>Short Term</u> (1985-1990)	<u>Mid-Term</u> (1990-1995)	<u>Long Term</u> (1995-2005)
5. <u>Investigate the Potential for Disposing of Infectious Waste at the Incineration Facility to be Installed at the Proposed Waste to Energy Plant in Oxnard</u>	X		

An incineration facility is to be installed and operated at the proposed waste to energy plant. The possibility of utilizing this facility to dispose of infectious waste from Ventura County sources must be investigated.

Responsible Agencies: Coordination of this investigation will need to be provided by the Environmental Health*, APCD, Planning, and the permit applicant.

Estimated Resources Required: Since the owner/operator of the facility has proposed this alternative to the County Environmental Health Division, this should be investigated and assessed further as part of the permit process. Therefore, no additional manpower is required. This task will be completed during the short and mid-term planning period.

* Indicates the lead agency

TABLE XVI-2
CoSWMP IMPLEMENTATION SCHEDULE (cont.)
SLUDGE MANAGEMENT

	<u>Short Term</u> (1985-1990)	<u>Mid-Term</u> (1990-1995)	<u>Long Term</u> (1995-2005)
1. <u>Complete the Regional Study of alternatives for the disposal of sludge and act on recommendations.</u>	X		
Responsible Agency: VRSD*, Planning Division, Environmental Health, Sanitation Districts.			
Estimated Resources Required: No additional resources required as this is part of an ongoing program.			
2. <u>Institute a marketing analysis survey to determine viability of utilizing the mineral and organic content of dried sludge, and educate the public to the use of sludge as a soil amendment.</u>	X		
Responsible Agency: VRSD*			
Estimated Resources Required: Approximately 120 hours of one person's time would be required to develop, conduct and analyze a survey of this nature.			
3. <u>Explore and obtain data concerning the safe ocean disposal of sludge when and if the currently proposed State regulations are implemented.</u>	X		
Responsible Agency: VRSD*			
Estimated Resources Required: The amount of additional resources required depends on the scope of work.			

* Indicates the lead agency

TABl XVI-2
CoSWMP IMPLEMENTATION SCHEDULE (cont.)
OIL FIELD WASTE MANAGEMENT

	Short Term (1985-1990)	Mid-Term (1990-1995)	Long Term (1995-2005)
1. <u>Provide for the Proper Treatment and Disposal of Oil Field Waste</u>	X	X	
<p>Identify suitable locations for establishing a centralized treatment and disposal facility for non-hazardous oil field waste generated within Ventura County.</p> <p>Ventura County's oil industry is a major County industry. It is estimated that at least 75% of the oil field waste requiring disposal in non-hazardous, but requires special handling at the disposal site and requires a specially permitted disposal area. The need for an oil field waste treatment/disposal facility in the County is evident.</p> <p>Responsible Agencies: Planning*, Environmental Health, VRSD, major producing oil companies, private disposal site owners and operators.</p> <p>Estimated Resources Required: This will occur as part of the CoSWMP process.</p>			
2. <u>Continue to Coordinate With the Oil Industry</u>	X	X	X
<p>Coordinate with oil companies with oil field waste issues.</p>			

* Indicates the lead agency

TABLE XVI-2
CoSWMP IMPLEMENTATION SCHEDULE (cont.)
OIL FIELD WASTE MANAGEMENT

	<u>Short Term</u> (1985-1990)	<u>Mid-Term</u> (1990-1995)	<u>Long Term</u> (1995-2005)
Responsbile Agencies: VRSD*, Planning Division, and oil industry representatives.			
Estimated Resources Required: This task will occur as part of the CoSWMP process.			
3. <u>Offshore Oil Field Waste Study</u>	X		
Initiate a study of offshore oil field waste production in the Santa Barbara Channel.			
Oil Field exploration and production activity offshore is increasing. It would benefit Ventura County's efforts to initiate a study of offshore waste management practices and determine the amount and types of waste generated in the Santa Barbara Channel. Coordination with the oil industry, neighboring coastal counties, and appropriate State and Federal agencies (i.e., California Division of Oil and Gas, Minerals Management Services, etc.) will be required, as well as utilizing other sources of information, which will aid in understanding the effects of waste generated and disposed offshore. The study would provide detailed information on projected waste volumes, types of waste, and probable method and place of disposal.			
Responsible Agencies: Planning Division*, in coordination with oil industry representatives, and appropriate State and Federal agencies.			
Estimated Resources Required: This task would require one full time person for approximately two to three months.			

* Indicates the lead agency

TAB XVI-2
CoSWMP IMPLEMENTATION SCHEDULE (cont.)
OIL FIELD WASTE MANAGEMENT

	Short Term (1985-1990)	Mid-Term (1990-1995)	Long Term (1995-2005)
4. <u>Continue to Collect Oil Field Waste Data Generated Onshore</u>	X		
Continue to collect and analyze the amount and types of oil field wastes generated onshore, including new types of wastes generated from enhanced oil recovery methods in Ventura County.			
Responsible Agencies: Planning Division*, in coordination with the oil industry and appropriate State and Federal agencies.			
Estimated Resources Required: This task will occur as part of the CoSWMP process.			
5. <u>Encourage Innovative Technologies Processes to Nonhazardous Oil Field Waste</u>	X	X	X
Respond positively to possible technological breakthroughs in treatment of nonhazardous oilfield waste			
Responsible Agencies: Planning Division*, Environmental Health Division, VRSD, in conjunction with oil industry and appropriate State and Federal agencies.			
Estimated Resources Required: This task will occur as part of the CoSWMP process.			

* Indicates the lead agency

TABLE XVI-2
CoSWMP IMPLEMENTATION SCHEDULE (cont.)
CLOSED LANDFILLS

	<u>Short Term</u> <u>(1985-1990)</u>	<u>Mid-Term</u> <u>(1990-1995)</u>	<u>Long Term</u> <u>(1995-2005)</u>
1. <u>Develop an appendix to the CoSWMP as part of the implementation phase.</u> <u>This appendix will be comprised of a records search identifying</u> <u>specific locations of old disposal sites and present land use.</u>	X		

Responsible Agencies: Planning*, coordinating with VRSD, Ventura
County Waste Haulers Assoc., Cities, Environmental Health, and
Ventura County Historical Society.

Estimated Resources Required: One staff person for approximately
160 hours.

* Indicates the lead agency

TABLE XVI-3

SUMMARY OF
PROJECTED EXPENSES AND POTENTIAL REVENUE
1985-1988

	<u>1984-1985</u>	<u>1985-1986</u>	<u>1986-1987</u>	<u>1987-1988</u>
A. <u>Projected Expenses</u>				
1. Environmental Health Division				
o Solid waste (enforcement and inspection)	\$149,142	\$158,091	\$167,576	\$177,631
o Hazardous waste program	\$209,138	\$221,686	\$234,987	\$249,086
2. Planning Division				
o County Solid Waste Management Plan (CoSWMP)	\$106,900	\$113,314	\$120,113	\$127,320
Total Projected Expenses All Programs	\$465,180	\$493,091	\$522,676	\$554,037
B. <u>Projected Revenues</u> (Potentially available)				
1. Solid waste permit and inspection fees	\$13,568	\$14,382	\$15,245	\$16,160
2. Tonnage fees/fee resolutions/ and ordinances				
o Environmental Health	\$132,712	\$140,675	\$149,116	\$158,063
o CoSWMP Funding Ordinance	\$106,900	\$113,314	\$120,113	\$127,320
3. Hazardous Waste Permit Fees	\$209,138	\$221,686	\$234,987	\$249,086
Total Projected Revenues All Sources	\$462,318	\$490,057	\$519,461	\$550,629

Assumptions:

1. CoSWMP expenses are based on estimated work program budgets, and may vary depending on the cost of the mandated update.
2. Potential tonnage fee revenues were projected using medium waste generation projections presented in Chapter IV which is based on population statistics 1985-2000, Ventura County Air Quality Management Plan.
3. Tonnages used for projections do not include waste exported or recycled.
4. California Waste Management Board does not require that counties show expenditures for commercially operated private facilities as per telephone conversation with Mrs. Christal Waters, June 1983.

5. California Waste Management Board requires that counties project out year program costs using an annual inflation rate. CMWB suggested using six percent as per telephone conversation with Mrs. Christal Waters, June, 1983.
6. Permit and inspection fees for are estimated on three anti-litter stations, fourteen infectious waste certifications, 200 solid waste vehicles, three infectious waste vehicles and seven landfill permits.

Source: Ventura County Planning Division, 1984.

Financial information on programs and projects related to the Simi Landfill site will be developed and scheduled, after the permitting process begins and ongoing state analysis of the site is completed. Specific conditions affecting mitigation measures and other cost factors can only be determined as part of the permitting process involved with expanding the Simi Valley site's capacity. The cost analysis of developing a western wasteshed landfill are indicative of the magnitude of costs.

It should also be noted that costs identified within this section are projected cost estimates and are subject to change once more detailed cost estimates have been developed. Costs estimates provided by VRSD relating to operation and capital improvement will also change as more detailed costs estimates are developed and become available. This task will be initiated in Phase I of the Implementation Schedule. The County will coordinate with major landfill operators in establishing such detailed cost estimates.

A. CoSWMP Program Planning

Projected expenses and revenues for the CoSWMP are provided in Tables XVI-3 and 4. Expenses for Plan Implementation are: Phase I (1985-1986) \$106,900; Phase II (1986-1987) \$120,113; Phase III (1987-1988) \$127,320 (CoSWMP update). Cost estimates for all phases assume the same level of staffing as 1984-85, with a 6% inflation factor. Costs for implementing Phase III may vary depending upon the cost of next CoSWMP update. Based on Assembly Bill 3433, counties are authorized to establish fees to recuperate expenses incurred in the preparation of the CoSWMP.

Ordinance 4715-5 was adopted by the board of Supervisors on June 28, 1983 (Reference XVI-4). This ordinance establishes a mechanism for funding the Solid Waste Management Plan. In the future, it is anticipated the CoSWMP will be funded in the same manner.

B. Enforcement and Inspection Program

The County's Environmental Health Division conducts inspections of solid waste facilities and enforces solid waste regulations and ordinances. Expenses and revenues projected for this program are provided in Tables XVI-3 and XIV-4. \$158,091 in program expenses are projected for 1985-1986. In 1986-1987 expenses are projected to be \$167,576. In 1987-1988, expenses for this program are projected to be \$177,631.

C. Hazardous Waste Program

The Hazardous Waste Program is managed by the County's Environmental Health Division. Funding for this program was established by Board adoption of Fee Ordinance No. 3627 on January 4, 1983 (Reference XVI-6). 1985-1986 program expenses are estimated at \$221,686. Total potential revenues were projected to be approximately the same and is based on assessing permit fees on an estimated 1,400 hazardous waste generators. Therefore, total potentially available revenues for this program would have to be adjusted, when the total number of hazardous waste generators have been identified.

Long term projections concerning available revenues and expenses for this program are provided in Table XVI-4. However, since the inventory of hazardous waste generators has not been completed, long-term projections will be adjusted upon inventory completion.

D. Facility Operations

The Ventura Regional Sanitation District operates solid waste facilities, including two landfills, one modified landfill and three antilitter stations. Engineering and technical activities required to support these operations include surveying, environmental monitoring, resource recovery, and permit monitoring. Solid waste management planning costs for future facilities is included in the Special Projects section of the VRSD budget (Reference XVI-6). Long range implementation includes landfill closures, Bailard site startup, and long-term landfill development to replace the Santa Clara River sites. Costs identified in this and the following sections are estimates only, and are subject to change as more detailed cost estimates are developed. The VRSD budget relies almost totally on user fees for solid waste operations (Tables XVI-5 and 6).

TABLE XVI-4

SUMMARY OF
PROJECTED EXPENSES AND POTENTIAL REVENUES
1990-2005
(Mid to Long Term)

	<u>1990</u>	<u>1995</u>	<u>2000</u>	<u>2005</u>
<u>A. Projected Expenses</u>				
1. Environmental Health Division				
o Solid waste (enforcement and inspection)	\$211,561	\$283,116	\$378,874	\$507,018
o Hazardous waste program	\$296,665	\$397,005	\$531,283	\$710,977
2. Planning Division				
o County Solid Waste Management Plan (CoSWMP)*	*	*	*	*
TOTALS	\$508,226	\$680,121	\$910,157	\$1,217,995
<u>B. Projected Revenues (Potentially Available)</u>				
1. Solid Waste Permit and Inspection Fees	\$19,247	\$25,757	\$34,468	\$46,126
2. Tonnage Fees/Fee Resolution/ or Ordinances				
o Environmental Health	\$188,256	\$251,928	\$337,137	\$451,165
o CoSWMP Funding Ordinance**	**	**	**	**
3. Hazardous Waste Permit Fees	\$296,665	\$397,005	\$531,283	\$710,977
TOTALS	\$504,168	\$674,690	\$902,888	\$1,208,268

Assumptions:

(Note: Same assumptions were used as stated in Table XVI-3)

*Specific Planning Program costs will be ascertained upon work program finalization

**CoSWMP funding will be correlated to program costs, per County Ordinance 4715-5.

Source: Ventura County Planning Division, 1984

The Bailard site is slated for startup in 1986 and cost associated with startup are projected to be \$836,700 (Table XVI-8). The VRSD indicates it is imperative that funds be set aside for landfill closure responsibilities which will occur in 1987 for the Coastal site and 1992 for the Bailard site.

VRSD solid waste operations are expected to cost an estimated \$3,085,000 for 1984-85 (Table XVI-5). User fees established for 1983-1984 vary from a base fee of \$5.90/ton at the Santa Clara Landfill, to \$6.20/ton at the Toland Road Landfill (Table XVI-6).

Major projects and estimates of capital expenditures planned through 1988 are listed below.

1. Heavy Equipment Replacement

The VRSD has three CAT D-8 dozers which range in age from seven to ten years and are accumulating hours to the point where replacement will be necessary. A seven year old CAT 633 scraper and a nine year old water truck will also be at the point of diminishing returns in the next five years. The total five-year cost for equipment replacement is \$1.56 million, if new equipment is purchased. The net cost, however, is anticipated to be \$0.65 million after costs are offset by accumulated depreciation and interest, as well as funds from sale of old units. The tractor replacement originally scheduled for 1982-83 was advanced to 1983-84 and paid from accumulated depreciation.

2. Bailard Landfill Startup

VRSD is planning to use the 160-acre Bailard site starting in 1986. This site will last four years and the total cost to open it will be approximately \$1 million. The \$185,200 needed for 1983-84 is available in the capital project fund as a carryover from 1982-83 (Table XV-8). It appears that a special fee increase may be needed to recover added costs in 1984-85.

3. Landfill Closure

During the next three years the Santa Clara and Coastal sites will be closing. It will also be necessary to set aside funds for the closure of the Bailard site in 1991. Total costs for the Santa Clara site (\$1.1 million) have been identified by a detailed closure plan. The City of Oxnard will pay for the closure of the Santa Clara site. Costs for the Coastal, Bailard, and new western county site will be detailed when closure plans are prepared. However, based on the magnitude of the Santa Clara site closure, the costs for closing Coastal and Bailard are expected to be on the order of \$1 million and \$2 million respectively and could be higher (Table XVI-9).

4. Replacement Landfill

Within approximately seven years, all current available landfill capacity along the Santa Clara River will be used and it will be necessary for a replacement landfill to open. Permitting costs can be expected to run approximately \$320,000 over the five-year period. Actual total cost for establishing a new site may run 10-15 million

dollars depending upon the site location. (Note: Closure costs for the new landfill site may range from 5 to 12 million dollars depending on site size and closure date). However, the cost of closure could be amortized over the life of the site. If amortized for 35 to 49 years, annual projected costs for closure could range from \$144,000 to \$251,000.

E. Special Projects

Detailed costs associated with special projects such as establishing a new municipal waste landfill, solid waste transfer facility, and pesticide collection system will be provided as part of CoSWMP implementation (Phases I, II, III). A general cost estimate is provided in Appendix E (CoSWMP Volume II). A more detailed engineering cost estimates for the landfill will be provided by the facility owner, developer, or operator. A detailed cost estimate should include the following:

- o permit processing costs
- o land acquisition
- o grading
- o installation of storm drains
- o landscaping
- o electrical supply lines
- o on-site access road improvements
- o off-site access road improvements
- o parking areas
- o fencing
- o site drainage
- o traffic signals
- o weigh scales
- o scale house
- o retention ponds
- o gas collection system
- o leachate collection system (if required)
- o maintenance equipment
- o sanitation facilities
- o site closure costs (including final cover)
- o special studies (EIR, geohydrologic assessments)
- o monitoring wells
- o mitigation requirements as necessary (levees, liners, etc.)

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TABLE XVI-5

1984-85 PROPOSED SOLID WASTE OPERATIONS FOR VRSD
by functional area
(\$1,000's)

	Salaries/ Benefits	Services/ Supplies	Fixed Assets	Total
Toland Road Landfill	108	139	8	255
Santa Clara/Coastal Landfill	738	1391	228	2357
Ozena Landfill	4	27	0	30
Ojai Antilitter Station	21	48	2	72
Piru Antilitter Station	16	15	0	31
Camarillo Antilitter Station	17	34	0	50
Subtotal	<u>904</u>	<u>1654</u>	<u>238</u>	<u>2795</u>
Civil Engineering Support	25	16	0	41
Solid Waste Operations Support	84	44	8	135
Environmental Monitoring	15	56	0	71
Solid Waste Site Closure Planning	40	0	0	40
Resource Recovery Operations	2	1	0	3
Subtotal	166	117	8	290
TOTAL	1,070	1,771	246	3,085

Source: Ventura Regional Sanitation District, Preliminary Budget FY 1984-85,
May, 1984

TABLE XVI-6
PROPOSED
USER FEE SCHEDULE FOR THE VRSD
LANDFILLS AND TRANSFER STATIONS

SANTA CLARA, TOLAND ROAD SANITARY LANDFILLS

1982-83 RATE

1983-84 RATE

Refuse	\$ 5.40/ton (5.15 Santa Clara)	Santa Clara: \$5.90/ton*
Hard-to-handle	\$16.50/ton	Toland Road: \$6.20/ton**
Cars, station wagons, pickups, vans, trailers	\$ 2.50#/5 cubic feet or less	\$17.75/ton
Agricultural residue	\$ 5.00 for up to 2½ cubic yards	\$ 3.00#/5 cubic feet or less
Solid fill	\$ 4.10/ton - \$7.50 min.	\$ 5.25# for up to 2½ cubic yards
Special pull offs	\$ 5.00/ton - \$7.50 min.	\$ 4.80/ton - \$7.50 min.
Recyclable solid fill	\$12.00/pull	\$ 5.75/ton - \$7.50 min.
	\$ 1.00/ton (optional)	\$12.50/pull
		\$ 1.00/ton (Santa Clara)

CAMARILLO, OJAI, PIRU ANTILITTER STATIONS

Cars, station wagons, pickups, vans, trailers	\$ 2.50/5 cubic feet or less	\$ 3.50/5 cubic feet or less
	\$ 5.00 for up to 2½ cubic yards	\$ 6.00 for up to 2½ cubic yards

SPECIAL WASTES

Sewage sludge cake		
-50% solids and well digested	\$10.00/ton (Ventura Co.)	Same rate as refuse
-50% solids and undigested	\$20.00/ton (Other Counties)	\$10.00/ton
Wastes requiring special handling	\$10.00/ton plus direct costs	\$10.00/ton plus direct costs
Nonhazardous empty containers	\$31.50/ton	\$35.00/ton (Toland Landfill)
Permit application fee	\$100.00/out-of-county	\$100.00 (out-of-county)

NOTE: The minimum charge will be the unit price unless otherwise shown. The charge for oversized unweighed loads is \$2.50 per cubic yard. The surcharge for after-hours disposal is \$1.10/ton.

* Santa Clara		** Toland Road		# \$0.25 of this fee at the
Base fee	\$5.04	Base fee	\$5.83	Santa Clara site is for
Closure fee	0.50	Inspection fee	0.10	closure.
Inspection fee	0.10	Overhead shift	0.27	
Overhead shift	0.26		\$6.20	
	\$5.90			

Source: Ventura Regional Sanitation District 1984.

TABLE XVI-7
FIVE-YEAR CAPITAL IMPROVEMENT BUDGET FOR VRSD
HEAVY EQUIPMENT REPLACEMENT

Projected Costs

Priority	Description	1983-84	1984-85	1985-86	1986-87	1987-88	Methods of Finance
1.	1976 D-8 Dozer Equipment No. 7962		\$ 53,158				User Fees
2.	1976 633 Scraper Equipment No. 7236			\$136,914*			User Fees
3.	1973 D-8 Dozer Equipment No. 7963				\$201,906*		User Fees
4.	1974 D-8 Dozer Equipment No. 7964 and 1975 Water Truck Equipment No. 6887					\$254,495*	User Fees
5 Year Total							\$646,473

* Total cost of equipment is broken out as follows and includes six percent per year inflation:

Cost new	\$312,360	\$454,062	\$350,968	\$442,170
Less accumulated depreciation and interest	<u>179,202</u>	<u>237,148</u>	<u>96,062</u>	<u>132,675</u>
	\$133,158	\$216,914	\$254,906	\$309,495
Less sale of used unit	<u>80,000</u>	<u>80,000</u>	<u>53,000</u>	<u>55,000</u>
Net Cost#	\$ 53,158	\$136,914	\$201,906	\$254,495

This amount is to be included each year in the operating budget.

SOURCE: Ventura County Regional Sanitation District 1983

TABLE XVI-8
FIVE-YEAR CAPITAL IMPROVEMENT BUDGET FOR VRSD
BAILARD LANDFILL STARTUP

Projected Costs

Priority	Description	1983-84	1984-85	1985-86	1986-87	1987-88	Methods of Finance
1.	Maintenance Facilities Engineering	\$ 8,000					Carry over Balance in Construction Fund
2.	Maintenance Facilities Construction	167,200					"
3.	Soils Testing	3,000					"
4.	Maintain Stream Flow	4,800					"
5.	Miscellaneous*	2,200					"
6.	Grading and Drainage Control		\$40,000				User Fees
7.	Site Security Fence		33,000				"
8.	Miscellaneous		2,700				"
9.	Flood Protection			518,000			User Fees
10.	Miscellaneous			2,700			"
11.	Miscellaneous				700		"
12.	Gas Monitoring Wells					11,000	User Fees
13.	Water Monitoring Wells					40,000	"
14.	Miscellaneous						
	TOTALS	\$185,200	\$75,700	\$520,700**	\$700	\$54,400	
	5-Year TOTAL						\$836,700

* Miscellaneous includes: landscape design and review, miscellaneous permits, surveying, and drain improvements.

** Methods of financing are being investigated to spread the costs of all priorities evenly over the 5-year period.

SOURCE: Ventura Regional Sanitation District 1985.

TABLE XVI-9
FIVE-YEAR CAPITAL IMPROVEMENT BUDGET FOR VRSD
LANDFILL CLOSURE

Projected Costs							
Priority	Description	Proposed 1983-84	1984-85	1985-86	1986-87	1987-88	Methods of Finance
1.	Santa Clara Landfill, total cost \$1.1 million (\$270,000/yr. for 5 years)		\$270,000	\$270,000	\$270,000	\$270,000	City of Oxnard Bonds to be paid back using taxes
2.	Coastal Landfill, total cost in 1987 approx. \$1 million	\$200,000	235,000	265,000	300,000		User Fees
3.	Bailard Landfill, total cost in 1991 approx. \$2 million					\$350,000	User Fees
(*4.	Replacement Landfill)						
TOTALS 5-Year Total		\$200,000	\$505,000	\$535,000	\$570,000	\$620,000	<u>\$2,700,000</u>

NOTE: Figures are not inflated, as interest and inflation are expected to be offsetting.

* Closure cost for replacement landfill is estimated to be between 3.8 and 10.8 million dollars but would be beyond the five year capital budget provided County Planning Division

SOURCE: Ventura Regional Sanitation District 1983

TABLE XVI-10
FIVE-YEAR CAPITAL IMPROVEMENT BUDGET FOR VRSD
REPLACEMENT LANDFILL

Projected Costs							Methods of Finance
Priority	Description	Proposed 1983-84	1984-85	1985-86	1986-87	1987-88	
1.	Countywide EIR Non-site specific	--	--	--	--	--	CoSWMP
2.	Hydrogeologic Work Estimate	\$25,000					Property Tax
3.	Land Availability Arrangements	10,000	\$18,000	\$19,000	\$20,000	\$21,000	"
4.	EIR		66,000	33,000			"
5.	CUP			12,000	12,000		"
6.	* Authority to Construct			3,000	3,000		"
7.	* Permit to Operate			3,000	3,000		"
8.	* Coastal Development			2,000			"
9.	Report of Disposal Site Information			12,000	7,000		"
10.	Solid Waste Facilities Permit				4,000		"
11.	Discharge Permit					9,000	"
12.	Master Development Plan				13,000	25,000	"
13.	Closure Costs to be determined						
	TOTALS	\$35,000	\$84,000	\$84,000	\$62,000	\$55,000	
	5-Year Total						\$320,000

*If necessary.

SOURCE: Ventura Regional Sanitation District 1983.

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1870